



Hi Performance Embedded Linux Stand Alone DVR

RTS series



Installation and User Manual



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Welcome

Thank you for purchasing our DVR!

This operations manual has been designed to be a reference tool for the installation and operation of your system. Here you can find detailed information about the features and functions specific to this DVR series, as well as a detailed menu tree.

Before installation and operation please read the following safeguards and warnings carefully!

Important Safeguards and Warnings

1. Electrical safety

DVR installation and operation should conform to all applicable local electrical safety codes. We assume no liability or responsibility for any damages such as fire, or electrical shock caused by improper handling or installation.

2. Transportation security

Heavy stress, violent vibration, and water damage are not allowed during transportation, storage and installation.

3. Installation

Keep unit upright, and handle with care.

Do not apply power to the DVR before completing installation.

Do not place objects on the DVR.

4. Qualified engineers needed

All examination and/or repair work should be performed by qualified service engineers. We are not liable for any problems caused by unauthorized modifications or attempted repair.

5. Environment

The DVR should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.

6. Accessories

Be sure to use all the accessories recommended by manufacturer. Before installation, please open the package and check all the components listed below are included:

- One Power Cable
- One Ethernet Cable
- Four HDD cables
- Alarm & Relay Terminal Blocks
- Extension Cable (for audio, loop & matrix)
- One Remote Control (including the battery)
- One USB Mouse
- One CD (including DVR manual, client & small tools)
- Warranty Card
- A Package of Installation Fittings

Contact the local retailer ASAP if something is missing in the package.

Note: Any changes of this manual made to the actual product are subject to no further notification.

1 FEATURES AND SPECIFICATIONS

1.1 Features

This series DVR has the following features:

- Most popular model, widely accepted in the worldwide security industry
- H.264 compression algorithm ideal for standalone DVR
- Real-time live display up to 16 cameras, 400/480 fps recording for CIF & 100/120 fps recording for 4CIF
- Pentaplex operation: Multi-channel live viewing, recording, playback, backup, and remote operation simultaneously
- RTS systems can support up to 8 HDDs/6 HDDs & CD-RW/DVD-RW supported
- EL systems can support 1 HDDs
- Multiple control methods: Front panel, IR remote control, Watchnet keyboard, USB mouse and network keyboard.
- Smart video detection: Motion detection, camera masking, video loss.
- Smart camera settings: Privacy masking, camera lock, color setting, and title display
- Pan/Tilt/Zoom and Speed Dome Control: More than 60 supported protocols, preset, scan, auto pan, auto tour, pattern, auxiliary functions supported. And with Watchnet Speed Dome, 3D intelligent positioning function supported.
- 16 channel audio inputs and bi-directional talk supported
- Easy backup methods: USB devices, CD-RW/DVD-RW, and network download
- Alarm triggering screen tips, buzzer, PTZ preset, e-mail, FTP upload.
- Smart HDD Management: Non-working HDD hibernation, HDD faulty alarm, RAID functionality.
- Powerful networking software: Built-in web server, multi-DVR client & CMS, networking access for remote live viewing, recording, playback, setting, system status, event log, e-mail & ftp function.

1.2 Specifications

Model

EL12004RT	4 channel audio/video Slim Line
E/12004/24008/48016RTS	4/8/16 channel audio/video basic model
E/12004/24008/48016RTSL	4/8/16 channel loop and matrix combination model
E/12004/24008/48016RTSH	4/8/16 channel loop matrix and audio/video model

System

Main Processor	High performance embedded microprocessor
Operating System	Embedded LINUX
System Resources	Pentaplex function: Multi-channel live viewing, recording, playback, backup, and network operation simultaneously
User Interface	User-friendly GUI (Graphical User Interface), on screen-tips
Input Devices	Front panel, USB mouse, Watchnet keyboard, IR remote control, network keyboard
Input Methods	Numeric/Character/Denotation
System Status	HDD status, data stream statistics, log recording, BIOS version, on-line users, etc.

Video

Video Input	4/8/16 Channel, BNC, 1.0Vp-p, 75Ω, looping (optional), matrix output		
Video Output	2 channel TV output BNC, 1.0Vp-p, 75Ω, 1 VGA output		
Video Standards	NTSC (525 line, 60f/s), PAL (625 line, 50f/s)		
Video Compression	H.264		
Video Resolution	<i>Format</i>	NTSC	PAL
	D1 (4CIF)	704 x 480	704 x 576
	CIF	352 x 240	352 x 288
Video Recording	<i>Format</i>	NTSC	PAL
	D1 (4CIF)	1f/s to 7f/s	1f/s to 6f/s
	CIF	1f/s to 30f/s	1f/s to 6f/s
Video Display Split	Full and multiple screen display split, 1/4/8/9/16 windows		
Tour Display	Supported		
Image Quality	6 levels image control		
Privacy Masking	Self-defined four-sided zone for privacy masking on each camera		
Camera Lock	Camera locked for users		
Camera Adjustment	Adjust color according to different time periods		
Video Information	Camera title, time, video loss, camera lock, motion detection, and recording		
TV Output Adjustment	Adjust TV output color, and display zone		

Audio

Audio Input	4/8/16 channel, BNC, 200-2800mV, 30KΩ
Bi-directional Audio Input	1 channel, BNC, 200-2800mV, 30KΩ
Audio Output	1 channel, BNC, 200-3000mv, 5KΩ
Audio Compression	ADPCM

Video Detection & Alarm

Motion Detection	192 (16x 12) detection zones 6 levels of detection sensitivity Trigger recording, PTZ movement, tour, alarm, e-mail, and FTP
Video Loss	Trigger recording, PTZ movement, tour, alarm, e-mail, and FTP
Camera Masking	Trigger recording, PTZ movement, tour, alarm, e-mail, and FTP
Alarm Input	4/8/16 channel, programmable, ground, manual, open/closed Trigger recording, PTZ movement, tour, alarm, e-mail, and FTP
Relay Output	6 Channel, 30VDC, 1A, NO/NC, form-C

Hard Disk

Hard Disk	8 SATA HDDs supported	
Space Occupation	Audio – 14.4MB/H	Video – 56 to 400 MB/H
HDD Management	Hard disk hibernation technology, HDD faulty alarm, and RAID (Redundancy)	

Record, Playback & Backup

Recording Mode	Manual, continuous, alarm, video detection (Including motion detection, camera masking, video loss)
Recording Priority	Manual > Alarm > Video Detection > Continuous
Recording Interval	1 to 120 minutes (Default: 60 minutes)
Overwrite Mode	Supported
RAID Function	Supported
Search Mode	Time/date, alarm, motion detection, and exact search (Accurate to the second)
Playback	4-ch playback, play, pause, stop, rewind, fast play, slow play, next file, previous file, next camera, previous camera, full screen, repeat, shuffle, backup selection
Digital Zoom	Zoom into selected zone during full-screen playback
Backup Mode	Flash stick / USB HDD / USB CD-RW/ DVD-RW / built-in IDE Burner / network download

Network

Interface	RJ-45 Port (10/100M)
Network Functions	TCP/IP, DHCP, DDNS, PPPOE, E-mail, FTP
Remote Operation	Monitor, PTZ control, playback, system setting, file download, log information

Auxiliary Interface

USB Interface	2 ports, 1 for mouse, 1 for backup
RS-232	Watchnet keyboard, PC communication
RS-485	PTZ control

Environmental

Power Supply	110V 60Hz / 220V 50Hz		
Power consumption	25W / 30W / 40W		
Working Temperature	32°F ~ 133°F	0°C ~ 55°C	
Working Humidity	10% ~ 90%		
Atmosphere Pressure	12.47PSI ~ 15.37PSI	86kPa ~ 106kPa	
Dimensions	2U, 440mm x 460mm x 89mm (W x D x H)		
Weight	15.4LBS	7.0KG	
Mounting	Desktop or Rack mount		

Comparisons

Model	EL RT	RTS	RTSL	RTSH
Video Input	4	4/8/16	4/8/16	4/8/16
Audio Input	4	16	No	4
Loop Output	No	No	16	16
Matrix Output	No	No	4	1
Bi-directional Audio Input	1	1	No	1

2 OVERVIEW AND CONTROLS

This section provides information about front and rear panel. When installing the DVR for the first time, please refer to this part first.

2.1 Front Panel

This DVR series has two different front panels. Refer to Figure 2-1 and Figure 2-2 for both of these front panels.

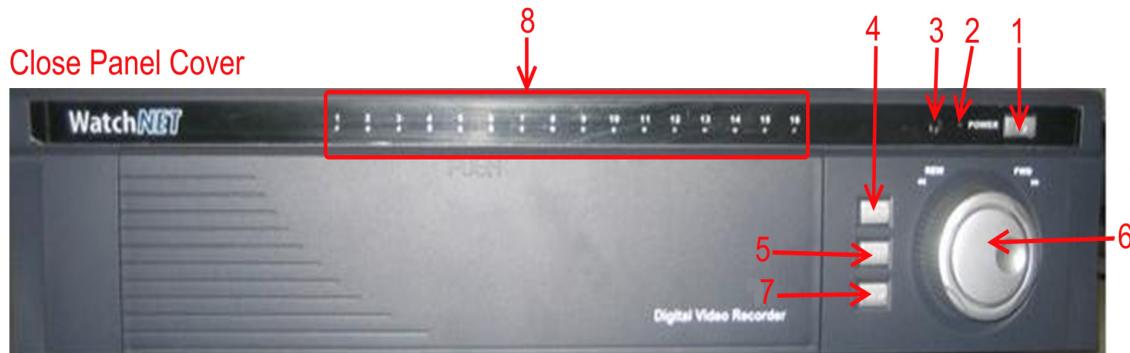


Figure 2-1

S/N	Name	Icon	Function
1	Power Button	POWER	Power button, press and hold for three seconds to shut down the DVR
2	Power Indication Light	LED	Power indication light
3	Remote Control Signal Receiver	IR	Is used to receive signals from the remote control
4	Enter	ENTER	Confirm operation
			Enter Cursor Selection
5	Cancel	EXIT	Cancel cursor selection
			During Playback, restore to real-time monitor
6	Jog and Shuttle (Inner and Outer Ring)	Knob	In real-time monitor mode it works as the left / right direction keys. In playback mode, turn clockwise to go forward, and counter-clockwise to go backwards
			Acts similar to up/down direction key in menus In playback mode, turn inner dial to perform frame by frame playback
			Turning the outer ring clockwise moves right, counter-clockwise moves left. Turning the Inner dial clockwise moves down, counter-clockwise moves up.
7	Switch View Mode	View	Switch between one, or multiple window display modes
8	Recording Light	LED 1-16	If the LED is Green, it means the recording is on.

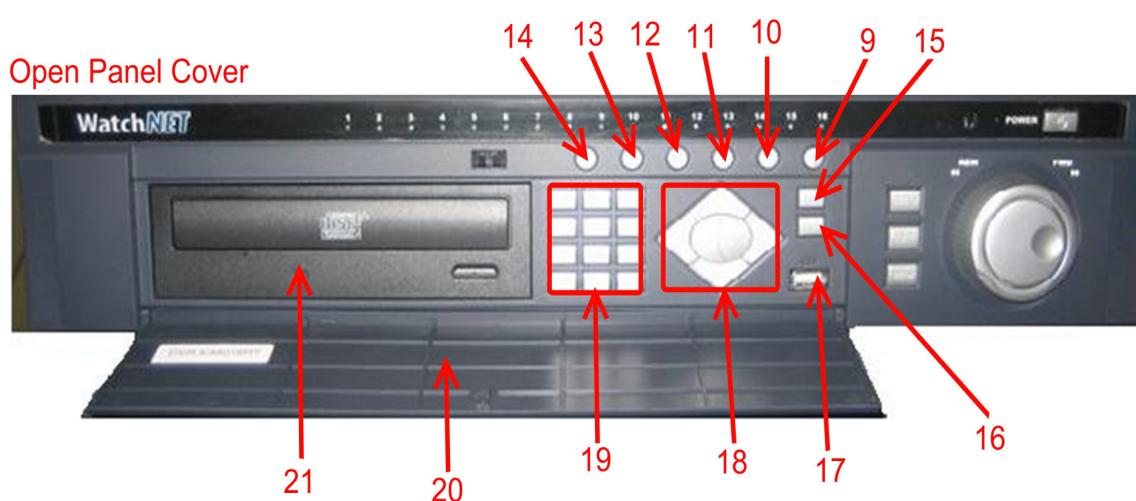


Figure 2-2

S/N	Name	Icon	Function
9	Play Next Selection	▶	Play the next recording file
10	Fast Forward	▶▶	Fast Play Speed, 4 levels of speed adjustment
11	Slow Play	▶▷	Slow playback, 4 levels of speed adjustment
12	Play / Pause	▶▷	Play/Pause
			When in real time monitor, press to enter search menu.
13	Reverse Play	◀	Do a reverse playback, 4 level of speed adjustment
14	Play Previous Selection	◀	Play the previous recording file
15	Record	REC	Opens Manual Record Options
16	Function Key	AUX	In Full Screen Mode. Will open the PTZ control and Color Setting
			In Search it will change the Display Mode
17	USB connector		Used for external storage, 1 Front, 1 Rear, USB mouse connection
18	Left & Right Arrow	◀▶	Shift current activated control When in playback mode, push these buttons to control the playback bar
	Up & Down Arrow	▲▼	Activate the current control, modify setup, increase/decrease numeral, assistant functions such as PTZ menu
	Exit & Enter Button	Exit/Enter	Exit to previous screen / Enter to Onscreen chosen selection
19	Number Pad	*, 0-9, #	Input password, switch channel, and input numerals
20	Panel Cover		Protect the front panel front dust
21	Optical Drive	CD-RW / DVD-RW	Used for recording backup to the CDs DVDs

2.2 Front Panel for EL system



S/N	Name	Icon	Function
1	Power Button		Press and hold for three seconds to shut down the DVR. DVR is in stand-by When power button led is up
2	Reverse/Pause		During normal playback or while paused, push this button to reverse Playback, In reverse playback, push this button to pause playback.
3	Slow Play		Switch between normal playback, and multiple slow playback speeds. When a text box is selected use to input "8"
4	Play Previous		In playback mode, this will playback the previous video In the setup menus, this can be used to move up
5	Assistant		One-window monitor mode, click this button to display assistant function: PTZ control and image color In PTZ menu, shift PTZ control menu.
			Backspace function: Used for numeral control or text control, it can delete the previous character before the cursor
			In motion detection setup, working with AUX and direction keys to realize setup.
			Used to switch between HDD record time in HDD information menu, or other information (Menu prompt)
6	Record		Manually stop/start recording, working with direction keys or numeral keys
7	Display		Time Display, remote control sensor
8	Enter		Confirm operation, Go to default button, Go to main menu
9	Down		Activate the current control, modify setup, increase/decrease numeral, assistant functions such as PTZ menu, Switch from multi-view to single view, When a text box is selected use to input "4"
10	Right		Shift current activated control, When in playback mode, push these buttons to control the playback bar, In single view switch from 1 camera to another, When a text box is selected use to input "3"
11	Left		Shift current activated control, When in playback mode, push these buttons to control the playback bar, In single view switch from 1 camera to another, When a text box is selected use to input "2"
12	Up		Activate the current control, modify setup, increase/decrease numeral, assistant functions such as PTZ menu, Switch from multi-view to single view, When a text box is selected use to input "1"
13	Cancel		Close upper interface or controls.
15	Play Next		In playback mode, this will playback the next video, In the setup menus, this can be used to move down
14	Shift		In preview interface (Only in this menu), press this button for three seconds, to switch between TV / VGA output.
			When a text box is selected, click this button to switch between numeral, English (Small / Capitalized) & special characters, Open/close tour
16	Fast Play		Switch between normal playback, and multiple fast playback speeds. When a text box is selected use to input "7"
17	Play/Pause		During reverse playback or while paused, push this button to resume normal playback, In normal playback, push this button to pause playback In pause mode, push this button to resume normal playback
			In real-time monitor mode, push this button to enter the video search menu.

2.3 Rear Panel

2.3.1 RTS series

Please refer to Figure 2-3 for real panel information.

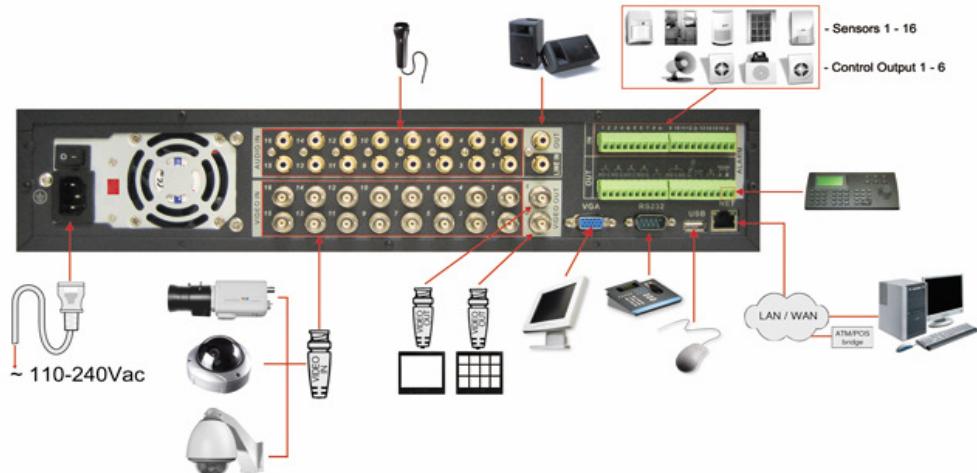


Figure 2-3

2.3.2 RTSL/RTSH (with Loop Out and Matrix)

Refer to Figure 2-4 for real panel information

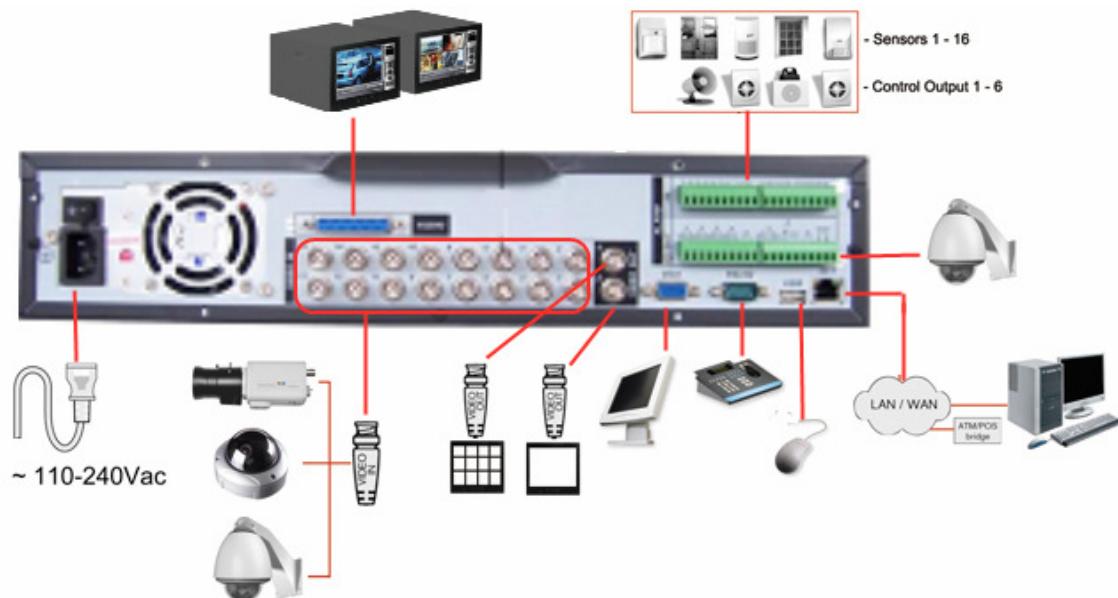


Figure 2-4

Note: 25-pin or 37-pin interface

2.3.3 EL Systems

Please refer to Figure 2.3.3 for real panel information.

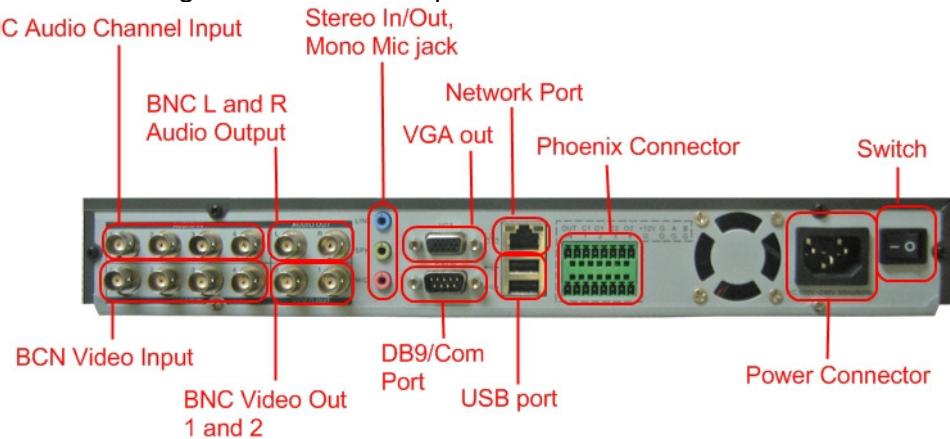


Figure 2.3.3

2.3.4 Connection Sample

Refer to Figure 2.3.4 for a connection sample reference when connecting the DVR

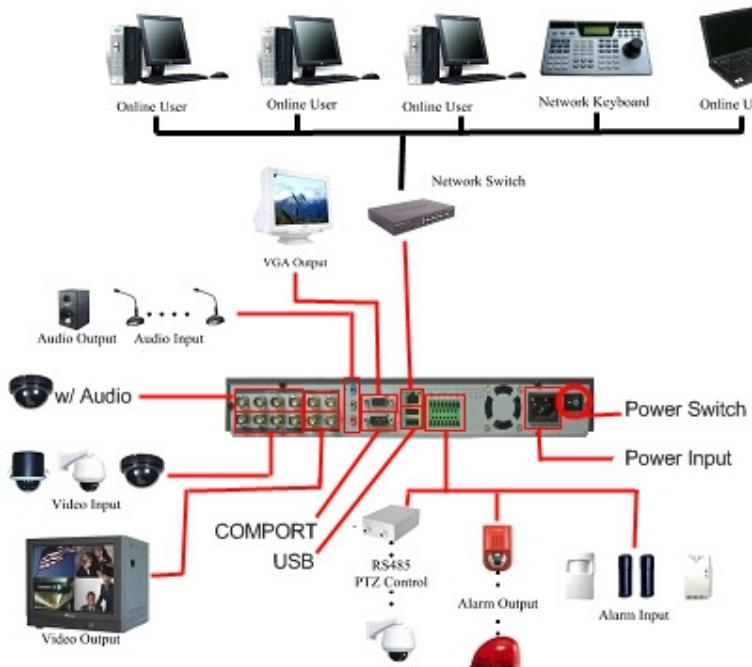
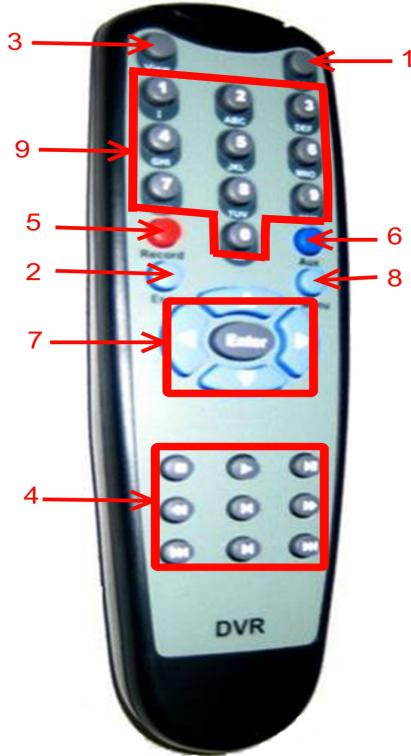


Figure 2.3.4

2.4 Remote Control

The remote control interface is shown as in Figure 2-5

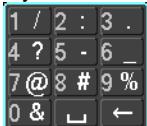


S/N	Name	Icon
1	DVR Remote switch	Id
2	Cancel	Esc
3	Switch View Mode	View
	Stop	■
	Play Next Selection	▶
	Fast Forward	▶▶
	Slow Play	▶▶
	Play / Pause	▶II
	Reverse Play	◀
	Play Previous Selection	◀
5	Record	Record
6	Function Key	Aux
	Left & Right Arrow	◀▶
7	Up & Down Arrow	▲▼
	Enter	Enter
8	Menu	Menu
9	Number Pad	*, 0-9, #

Figure 2-5

2.5 Mouse Control

When inside the main menu

Left-Click	In the input box, select multiple input methods. Left-click the corresponding button on the panel, then input numerals, or English characters
	In English input mode: ← stands for deleting the previous character. 
	In numeral input mode: ← stands for deleting the previous numeral. 
	When special sign is needed, click the corresponding numeral in the front panel to select. For example, click numeral 1 to input "/", or click the numeral in the on-screen keyboard directly. 
	When one menu item have been selected, left-click the mouse to view menu content
Double Left-Click	Implement the control operation
	Modify checkbox or motion detection status
	Click a combo box to open up the drop down list
	Perform special operations on a control (Example: Double-clicking an item in the file list will playback a video)
Right-Click	In multiple-window mode, double left click one channel to view in full-window. Double left click current video again to go back to previous multiple-window mode.
	Exit current menu without saving changes
	In numeric input box: Increase or decrease the numeric value
Middle-Click / Scroll Wheel	Switch the items in the check box
	Page up or page down
Move Mouse	Select current control or move control
Drag mouse	Select motion detection zone
	Select privacy mask zone.

2.6 Virtual Keyboard & Front Panel

2.6.1 Virtual Keyboard

The system supports two input methods: Numeric input and English character input (Upper and lower-case) Move the cursor to the text column, the text is shown as blue, the input button will pop up on the right. Click that button to switch between numeric input and English input. Use > or < to shift between upper, and lower-case letters.



2.6.2 Front Panel

Move the cursor to the text column. Press the AUX key and use arrow keys to select number. Then press the enter button to input the highlighted number.

3 Installation and Connections

Note: Any installation and all operations should conform to the local electric safety rules.

3.1 Check Unpacked DVR

When receiving the DVR from the shipping agency, please check whether there is any visible physical damage to the DVR. The protective materials used for the packaging of the DVR can protect against most accidental clashes during transportation. Once this is verified then open the box to check the accessories. Please check the items in accordance with the list on the warranty card. Finally remove the protective film from the DVR.

3.2 HDD Installation

3.2.1 Choose HDDs

We recommend Seagate HDDs of 7200rpm or higher.

3.2.2 Calculate HDD Size

This DVR series has no limit to HDD capacity. Use any 120G-750G HDD to guarantee higher stability.

The formula of total HDD size is:

$$\text{Total Capacity (MB)} = \text{Camera Amount} * \text{Recording Hours} * \text{HDD Usage Per Hour (M/h)}$$

H.264 compression is ideal for standalone DVRs. It can save more than 30% HDD capacity over MPEG4. When calculating the total HDD capacity, estimate the average HDD capacity per hour for each channel. For example, for a 4-ch DVR, the average capacity of HDD usage per hour per channel is 200M/h. Now if the DVR have to record video for 12 hours each day for 30 days, the total capacity of HDDs needed is:

$$4 \text{ channels} * 30 \text{ days} * 12 \text{ hours} * 200 \text{ M/h} = 288 \text{ GB.}$$

So a 300G HDD or 2 160G HDDs is needed for the example.

3.2.3 HDD Installation

SATA cables, fastening screws and smart HDD shelf design are already provided in the accessories.

Please follow the instructions below to install the hard disk.

3.2.3.1 RTS series



1. Remove the upper cover of the DVR



2. Remove the upper HDD bracket



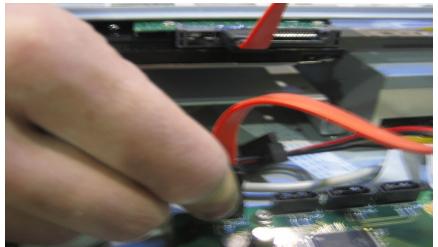
3. Install the HDD. Note the drive is installed upside down, make sure bracket is in correct orientation



4. Screw the two bracket parts together



5. Screw the bracket back into the internal unit.



7. Connect the HDD with the SATA/IDE port, via the communications cable



9. Replace the back cover, and re-screw firmly



6. Loosen the power cords for the HDD



8. Connect the power cord for the HDD.



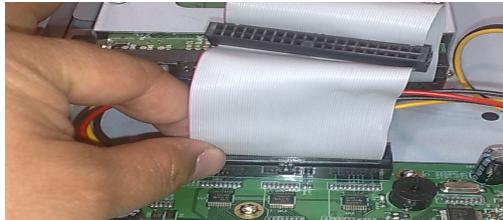
10. Connect any USB devices (Mouse, portable hard drive, or CD-RW) to the USB port directly.



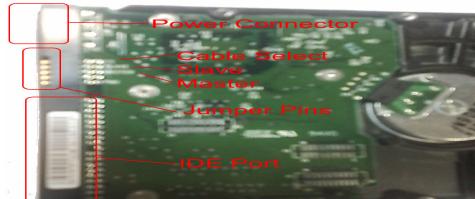
1. Remove the upper cover of the DVR by removing 4 screws located at the back



3. Screw the HDD into the bracket



5. Connect the IDE cable to the IDE port



2. Set the IDE jumper on the HDD to "Master"



4. Connect the IDE and Power to the HDD



6. Return the back cover and re-screw

After HDD installation, please check connection of data ribbon and power cord.

3.3 CD/DVD Burner Installation

For built-in burner, remove the front plate cover to install CD burner. Use SATA series burners. This series DVR is compatible with various burner brands that are popular in today's market. Consult technical support or visit our website for more information.

3.4 Desktop and Rack Mounting

3.4.1 Desktop Mounting

To prevent surface damage, please make sure that the rubber feet are securely installed on the four corners of the bottom of the unit. Position the unit to allow for cable and power cord clearance at the rear of the unit. Be sure that the airflow around the unit is not obstructed.

3.4.2 Rack Mounting

The DVR occupies two rack units of vertical rack space. The hardware necessary to mount the DVR into a rack is supplied with the unit. Rear doors may be used only on rack columns that are more than 26 inches (66.0 cm) deep. Install the cabinet in well a ventilated location. Avoid extreme heat, humid or dusty conditions. Use a soft dry brush to clean opening outlet, cooling fan and etc regularly.

3.5 Connecting Power Supply

Please check that the input voltage and device power switch on the back match. Its recommend to use a UPS to guarantee steady operation, DVR life span, and other peripheral equipments operation such as cameras.

3.6 Connecting Video Input and Output Devices

3.6.1 Connecting Video Input

The DVR automatically detects the video standard (PAL or NTSC). It accepts both color and black-and-white and analog video.

NOTE:

- If a video distribution amplifier is installed between the video source and the DVR, do not set the output video level above 1 Vp-p.

To connect each video input:

1. Connect a coaxial cable to the camera or other analog video source.
2. Connect the coaxial cable to the video in connector on the rear panel.

Please refer to Figure 3-1 for more information.

NOTE:

A BNC installation tool is needed to connect coaxial cables to the rear panel.



Figure 3-1

3.6.2 Connecting Video Output

This section provides information about physically connecting video display devices to the DVR. See Figure 3-2. In the setup menu toggle the default outputs to Automatic, VGA, or CCTV. If connecting the DVR with a TV monitor or VGA monitor in automatic mode, the DVR will automatically detect the monitor type. And without any output device, by default, the DVR is configured to use a TV monitor. In this case, if the application requires a VGA monitor, press the button “AUX” and “**” on the front panel to change the display.

NOTE: BNC Video output 1 and VGA can't display at the same time. But BNC Video output 2 can display properly with Video Output 1 or VGA.

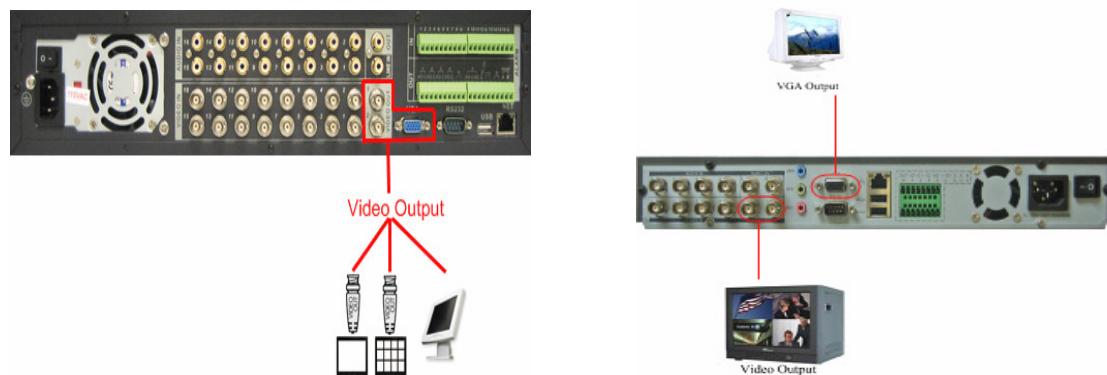


Figure 3-2

3.7 Connecting Bi-directional Audio & Looping Video Matrix

NOTE: Looping Video Matrix is only for RTSL & RTSH system

For the 25-pin or 37-pin interface, different models include different functions.

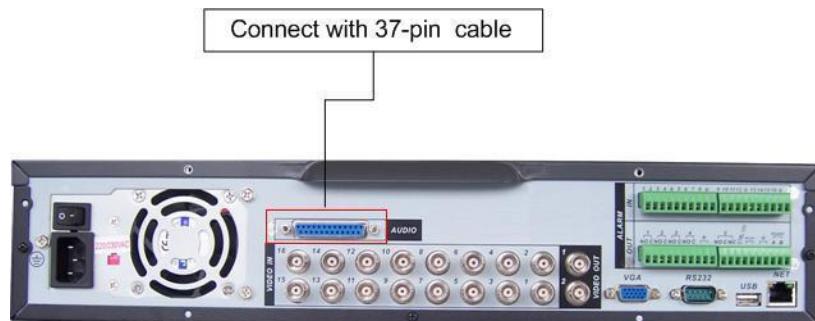


Figure 3-3

3.7.1 Audio Input/One Audio Output

RTSLH has 16 looping video inputs, 1 matrix video output, 4 audio inputs, 1 bi-directional audio input, and 1 audio output. See Figure 3-3.

The DVR encodes audio and video signals simultaneously, which controls audio at the monitored location.

To set up audio:

1. Make sure the audio input device matches the RCA input level. If the device and RCA input levels do not match, audio distortion problems may occur.
2. Make sure the audio connector is wired as follows:

3. Connect a line input device or pre-amplified microphone to the audio connector for the video channel on the rear panel. See Please refer to Figure 3-4.

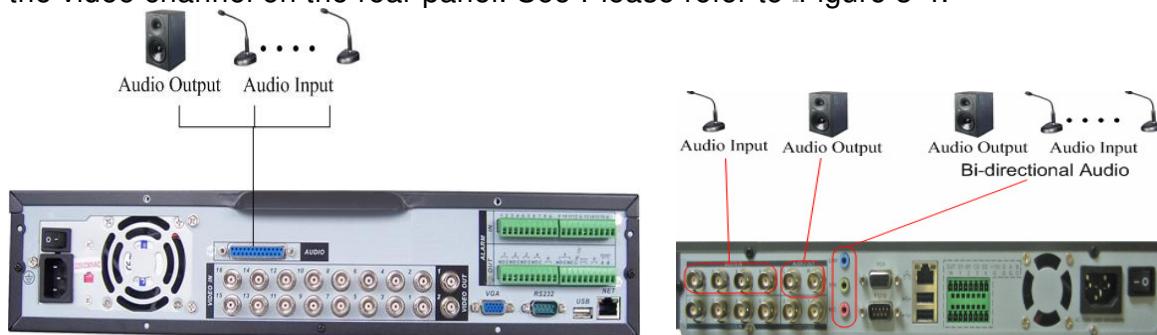


Figure 3-4

3.7.2 Looping video (RTS series only)

The DVR supports looping video. It passes the video input to a monitor or another analog video device.

To use looping video:

1. Connect a coaxial cable to the video out connector on 37-pin interface
Please note that a BNC installation tool is needed to connect coaxial cables to the rear panel.
2. Connect the other end of the coaxial cable to the analog device.

3.7.3 Matrix Video Output (RTS series only)

Use video matrix output connector during installation to display video sequentially from each video input. The unit displays each channel for selected seconds. This feature can use to verify camera installation.

To display video from each connected video source:

1. Connect a video monitor to the video matrix output connector.
2. Turn the DVR on, the monitor, and each video matrix output source.
3. Verify the video from each source and troubleshoot as necessary. Please refer to Figure 3-5.

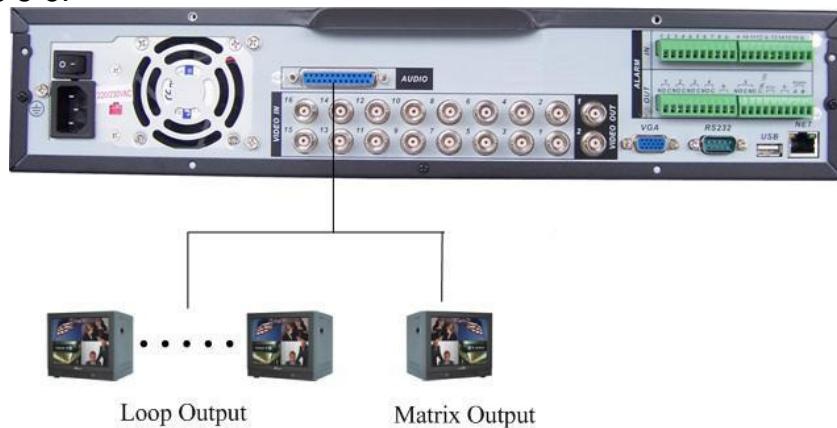


Figure 3-5

3.7.4 Alarm Input and Relay Output

The DVR offers 16 alarm inputs for external signaling devices, such as door contacts or motion detectors. Each alarm input can be either normally open or normally closed. Once configured, an alarm input can invoke many different

activities, including triggering a relay device, sending an alert to a security office or storing pre-alarm video to the DVR.

3.7.5 Alarm Input

Check the alarm input mode if it is grounding alarm input or not. For this series DVR, grounding signal is needed for alarm input. If connecting two units or one DVR and other device, please use a relay to separate them. Please refer to Figure 3-6 for more information.

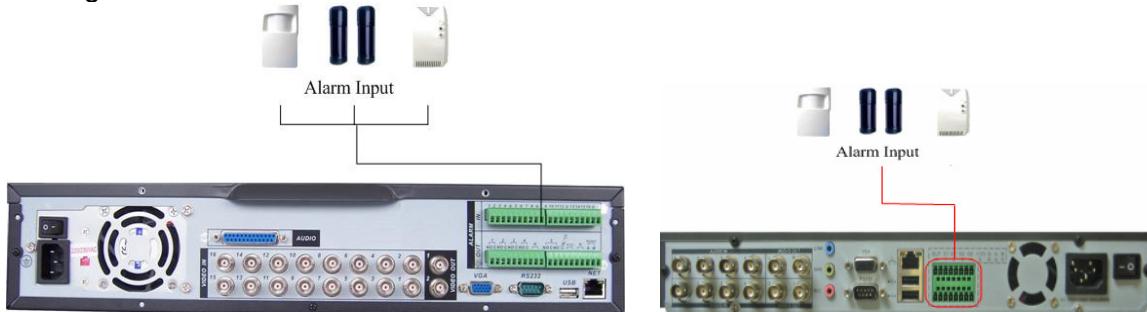


Figure 3-6

3.7.6 Alarm Output

Do not connect alarm output port directly with high power load (no more than 1 A) in case of heavy current. Use the co-contactor to utilize the connection between the alarm output port and the load. Please refer to Figure 3-7 for more information.

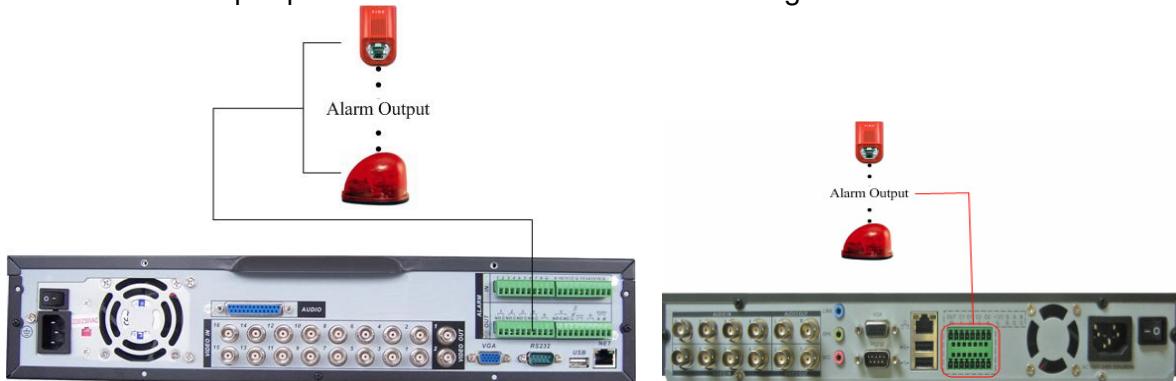


Figure 3-7

3.7.7 Alarm Input and Output Details

Refer to the following sheet and Figure 3-8 for alarm input and output information.

Parameter	Grounding Alarm
Ground	Ground line
Alarm Input	1, 2, ..., 16
Relay Output	1,2,3,4: NO and C(Normally Open and Com) 5: NO,C and NC(Normally Open, Com, Normally Closed) 6: Ctrl 12V(This is used for reset the sensor)
RS-485 A & B	RS-485 communication port. They are used to control devices such as a PTZ camera
+12v & C	This should input an external power input.

- 4/8/16-ch grounding alarm inputs. (Normally open or Normally close type)
- Please parallel connect COM end and GND end of the alarm detector (Provide external power to the alarm detector)

- Please parallel connect the Ground of the DVR and the ground of the alarm detector.
- Please connect the NC port of the alarm sensor to the DVR alarm input (ALARM)
- To reset the touched-off alarm remotely, use the DVR controllable 12 V power supply to the alarm detector such as the smoke detector.
- If using external power to the alarm device use the same ground with that of DVR

Alarm input public end should jump out with device power end
Alarm device connection terminal

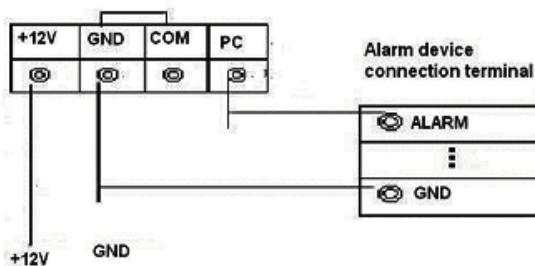


Figure 3-8

3.7.8 Relay Output Description

- 6 way relay alarm output. Provide external power to external alarm device.
- To avoid overloading, please read the following relay parameters sheet carefully. (See below table)
- The controllable +12v can be used to restore the smoke detector.
- Please refer to Figure 3-9 for alarm input module information.

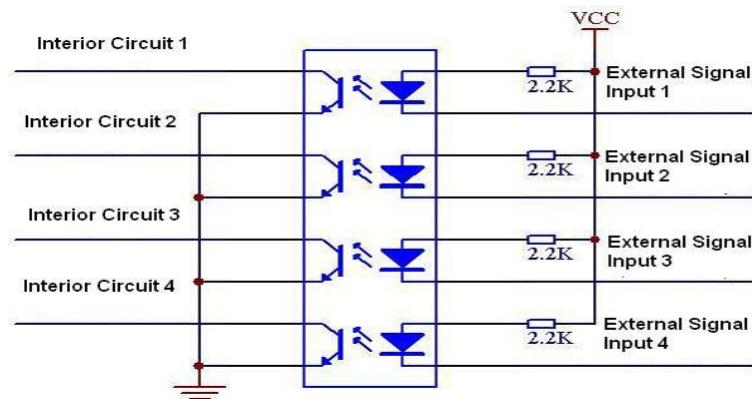


Figure 3-9

Please refer to Figure 3-10 for alarm output module information.

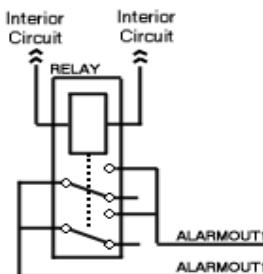


Figure 3-10

Relay Specification

Model:	JRC-27F	
Material of the touch	Silver	
Rating resistance load	Rated switch capacity	30VDC 2A, 125VAC 1A
	Maximum switch power	125VA 160W
	Maximum switch voltage	250VAC, 220VDC
	Maximum switch current	1A
Insulation	Between touches with same polarity	1000VAC 1minute 50/60Hz
	Between touches with different polarity	1000VAC 1minute 50/60Hz
	Between touch and winding	1000VAC 1minute 50/60Hz
Surge voltage	Between touches with same polarity	1500V (10×160us)
Length of open time	3ms max	
Length of close time	3ms max	
Longevity	Mechanical	50×106 times (3Hz)
	Electrical	200×103 times (0.5Hz)
Temperature	-40 °F ~+158 °F	-40 °C ~+70 °C

3.8 RS-232

Connect the DVR with a POS or Keyboard through RS-232. With a POS system, the DVR can communicate through RS-232 and Ethernet. The DVR can integrate the text content and even search the record through the info. This series DVR also support NKB operation. Operate the DVR from the keyboard controls instead of using the control pad on the front panel of the unit.

To connect a NKB keyboard to the DVR:

1. Assemble the KBD keyboard according to the instructions in its accompanying installation manual.
2. Connect the KBD keyboard into one of the RS232 ports on the DVR or through network.

3.9 RS-485

When the DVR receives a camera control command, it transmits that command up the coaxial cable to the PTZ device. RS-485 is a single-direction protocol, the PTZ device can't return any data to the unit. To enable this operation, connect the PTZ device to the RS485 (A, B) input on the DVR. Since RS485 is disabled by default for each camera, enable the PTZ settings first. This DVR series has support for multiple protocols such as Pelco-D, Pelco-P.

To connect PTZ devices to the DVR:

1. Connect RS485 A, B on the DVR rear panel.
2. Connect the other end of the cable to the proper pins in the connector on the camera.
3. Follow the instructions for configuring a camera to enable each PTZ device on the DVR.

3.10 Other Interfaces

There are still other interfaces on the DVR, such as USB ports. Refer to the Figure 3-11 for more information.

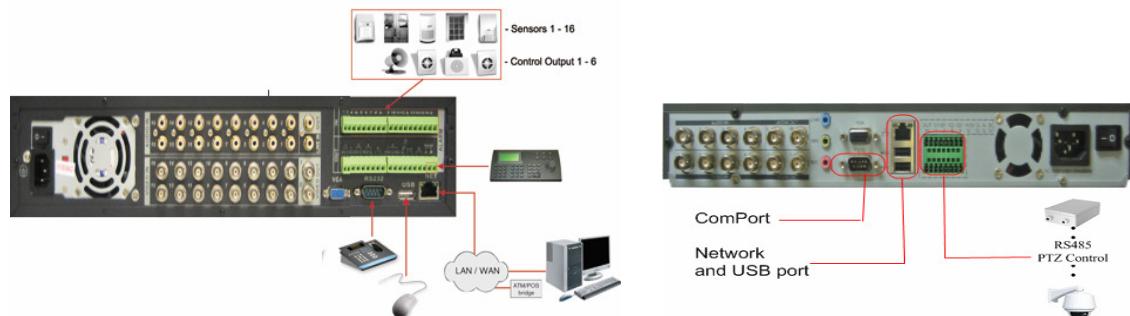


Figure 3-11

4 Main Screen



Before operation, please make sure HDD and all the cable connections are properly installed.



: Enter Backup window



: Enter DVR settings



: Enter DVR search for recorded images



: Login to DVR requires a valid username and password.



: Open the PTZ control panel



: Open the Picture controls.



: The Camera Indicator blue buttons indicate the cameras are connected. And the red numbers shows the cameras currently being viewed on screen. In case of video loss the camera the buttons will flash to red and blue. On a



Single camera view, click on the desired button to select a different camera.

- : 1 View camera on the screen.
- : 4 View cameras on the screen.
- : 6 View cameras on the screen.
- : 9 View cameras on the screen.
- : 10 View cameras on the screen.
- : 16 View cameras on the screen.
- : Rotate to the next set of cameras.
- : Auto Rotate automatically switching.
- : Large Screen Put camera(s) on full screen.



: Manually Active or Deactivate the relays

4.1 Login, Main Menu & Shutdown

4.1.1 Logging In

When the system boots up, it will display the GUI in multiple-camera mode. To login, navigate to the login button then press Enter or left-click the login button, then the System Login window will appear. See Figure 4-1.

The system consists of three default accounts:

- Username: admin. Password: 1234 (administrator, local and network)
- Username: user. Password: user (administrator, local only)
- Username: default. Password: default (hidden user)

For the system security, please change password after first login. Use the front panel, USB mouse or remote control for input.

Input method: Click to switch between numeric, English characters (Upper/lower-case), and denotation.

Note: Login failures performed 3 times in 30 minutes will result in account lock!



Figure 4-1

4.1.2 Main Menu

When login, the system main menu is shown as Figure 4-2. There are six icons: Search, Information, DVR Set Up, Advanced Set Up, Video Back Up, and System Shutdown. Move the mouse cursor or highlight the icon and then left-click the mouse or press the Enter button to enter the sub-menu.

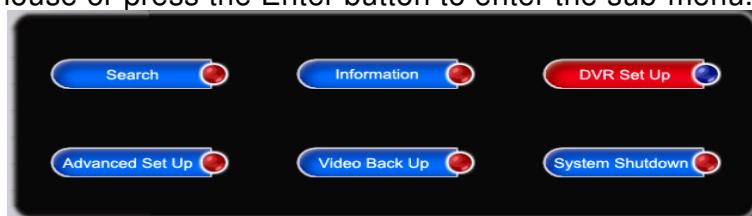


Figure 4-2

4.1.3 Shutdown

There are two ways to Shutdown the system. In the main menu, click shutdown button, see the interface shown below Figure 4-3.



Figure 4-3

There are several options available to choose from. See Figure 4-4 for a list.

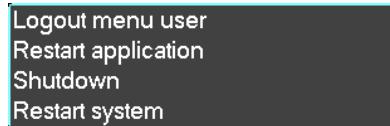


Figure 4-4

The other way is to press and hold the power button on the front panel for at least 3 seconds. The system will stop all operations and then click the power button in the rear panel to turn off the DVR.

4.1.4 Auto Resume after Power Failure

The system can automatically backup video and resume previous working status after power failure.

4.1.5 Replace Button Battery

Please make sure to use the same battery model if possible. It is recommend that the battery be replace regularly (such as once a year) to guarantee system time accuracy.

4.2 Recording Operation

4.2.1 Live Viewing

When login, the system is in live viewing mode, system's Main Screen, date, time and channel name is displayed. To change system date and time, refer to general settings (Main Menu->Setting->General). To change the channel name, please refer to the display settings (Main Menu->Setting->Display)



when at full screen, logo will be displayed when there is Video Loss or when there is no camera connected.

- When the DVR is recording the red dot on the right-hand side of the camera label will appear, green dot for motion detection.

4.2.2 Manual record

Note: A proper right is needed to implement the following operations.
Please make sure the HDDs have been properly installed.

4.2.2.1 Manual record menu

There are two ways to go to manual record menu.

- Right click mouse or in the main menu, Advanced->Manual Record.
- In live viewing mode, click record button in the front panel or record button in the remote control. Manual record menu is shown as in Figure 4-5.

4.2.2.2 Basic operation

There are three modes of operation: Schedule/Manual/Stop. Highlight icon  to select corresponding channel.

- Manual: the highest priority. After manual setup, all selected channels will begin ordinary recording.
- Schedule: channel records as set in recording setup (Main Menu->Setting->Schedule)
- Stop: all channels stop recording.

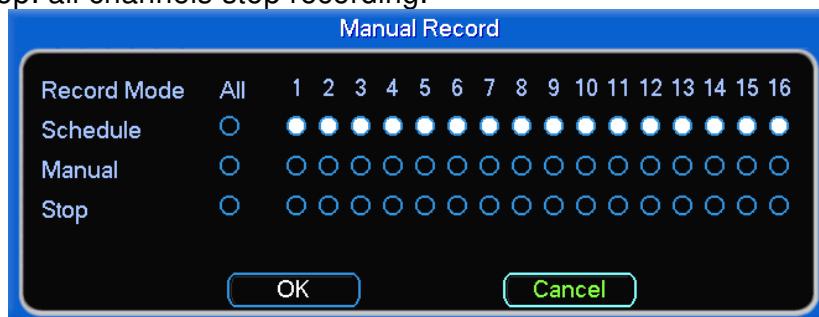


Figure 4-5

4.2.2.3 Enable/disable record

Please check current channel status: means it is not in recording status, means it is in recording status. Use the mouse or direction keys to highlight channel number. See Figure 4-6.

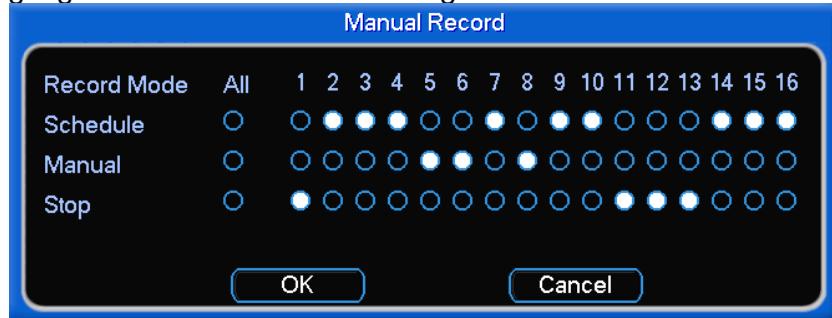


Figure 4-6

4.2.2.4 Enable all channel recording

Highlight All for Manual, to enable all channel recording.

Please highlight “ALL” after “Schedule”. See Figure 4-7. When the system is in schedule recording, all channels will records as previously set (Main menu->Setting->Schedule). The corresponding indication light in front panel will turn on.

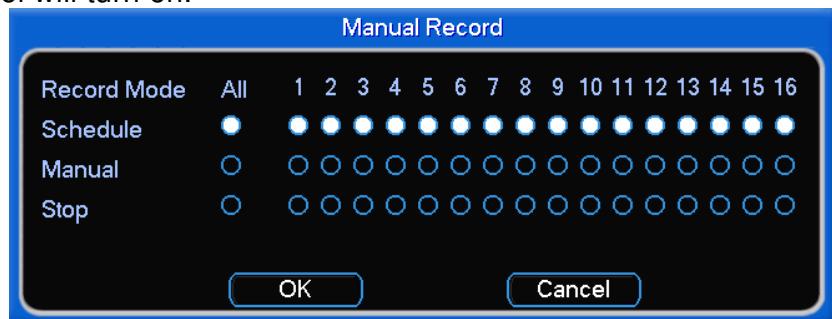


Figure 4-7

- All Channel Manual Record

Please highlight “ALL” after “Manual.” See Figure 4-8. When system is in manual recording, any scheduled settings that are set will be overridden ((Main menu->Setting->Schedule)). See the indicator lights in front panel turns on once the system begins manual recording mode.

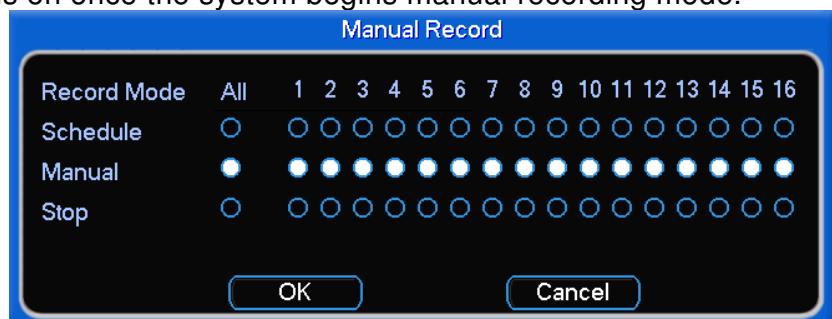


Figure 4-8

4.2.2.5 Stop all channel recording

Please highlight “ALL” after “Stop”. See Figure 4-9. System stops all channel recording no matter what mode it was set in the menu (Main menu->Setting->Schedule)

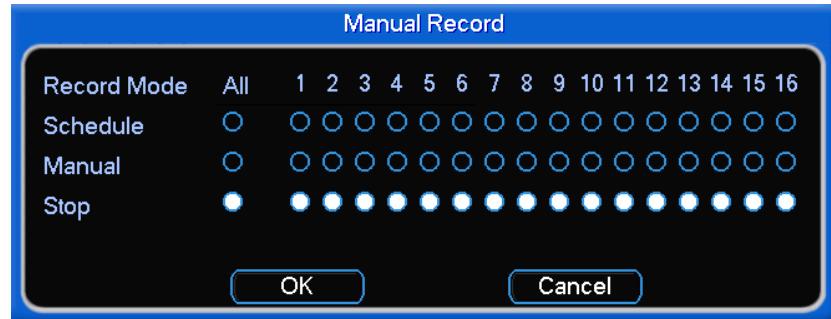


Figure 4-9

4.3 Search & Playback

RTS series supports 4 channel searches and will have 4 display windows while EL systems will support 1 display window but can display 4 channels simultaneously if there are recording on all 4 channels

4.3.1 Search Menu

There are three ways to go to search menu.

- Click Pause/Play button in the remote control.
- Click the Search icon on the Main Screen 
- Click Search in the Main Menu.

The search interface is shown as below. See Figure 4-10.

There are three file types:

- R: regular recording file.
- A: external alarm recording file.
- M: motion detection recording file
- C: card and pos test overlay recording file (For some special series only)

There are several playback windows. System supports 1/2/4-ch playback.

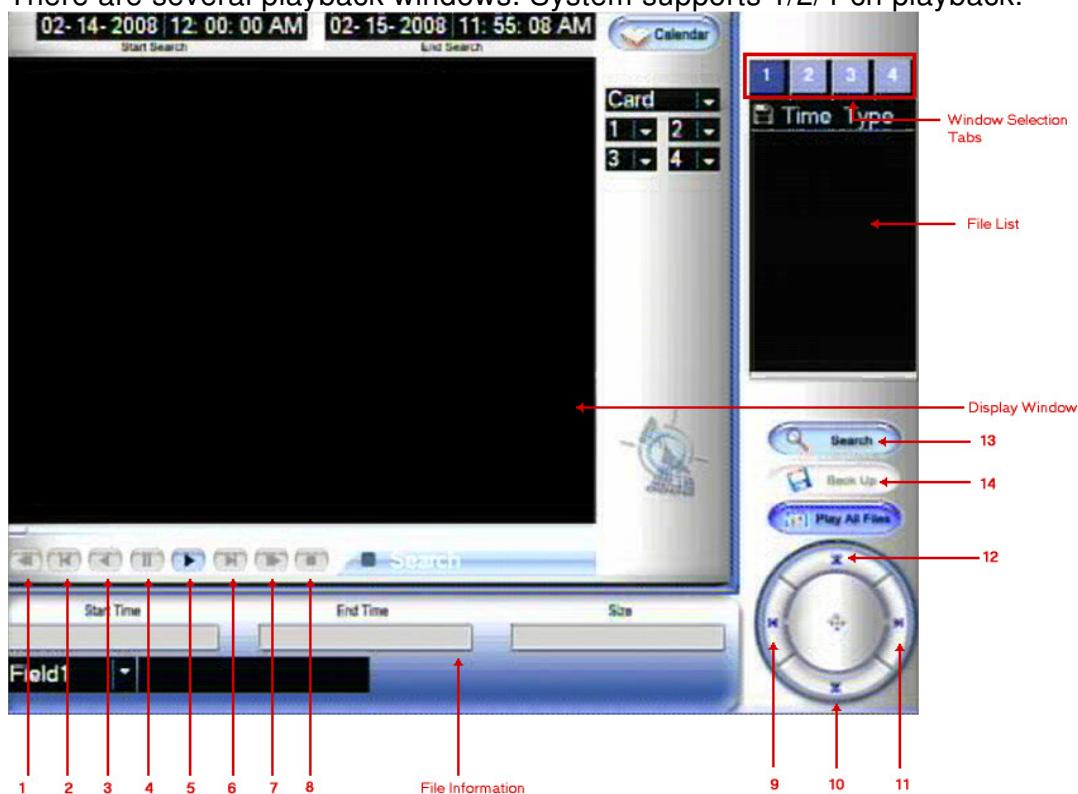


Figure 4-10

Please refer to the following sheet for more information.

Serial Number	Function
1	Slow Play
2	Previous Frame
3	Reverse Playback
4	Pause
5	Play
6	Next Frame
7	Fast Play
8	Stop
9	Previous File
10	Next Channel
11	Next File
12	Previous Channel
13	Search
14	Backup

4.3.2 Basic Operation

4.3.2.1 Playback

There are several search modes: Video type, channel number, or time. The system can display 32 files in one screen. Use up/down button to turn the page. Select the file name and double click mouse (or click enter button), to view file content.

4.3.2.2 Accurate playback

Input time (H/M/S) in the time column and then click playback button, the system can then utilize accurate playback.

4.3.2.3 Synchronized playback function when playback

During playback process, press any numeral key, system can switch to the corresponding channel video of the same time.

4.3.2.4 Digital zoom

When the system is in full-screen playback mode, drag the mouse in the screen to select a section and then left click mouse to utilize digital zoom. Right click the mouse to exit.

4.3.2.5 File backup

System supports backup operation during search. Put a √ before file name (multiple choices). Then click backup button (Button 14 in Figure 4-10).

4.3.2.6 Slow playback and fast playback

Please refer to the following sheet for slow play and fast playback function.

Button	Illustration	Remarks
Fast Play Button ►►	In playback mode, click this button to switch between various fast play modes such as fast play 1, fast play 2, and more.	Frame rate may vary due to different versions.
Slow Play Button ► (Or turn the outer ring counter clockwise.)	In playback mode, click this button to switch between various slow play modes such as slow play 1 or slow play 2.	

Play/Pause ►	In slow playback mode, click this button to switch between play/pause modes.	
Previous/Next	In playback mode, press ▶ and ◀ to view the previous or next video in current channel.	

4.3.2.7 Fast forward/fast backward and frame by frame playback

Special Functions of Shuttle and Jog	Illustration	Remarks
Fast Forward (Outer ring clockwise)	During playback, turn the shuttle ring clockwise slightly: This will fast forward at a slower pace. Turn it slightly more for a faster pace. Continue turning to increase the speed.	In forward or backwards mode, double-click the Pause/Play button to get normal playback. Frame rate may vary due to different version.
Fast Backward (Outer ring counter clockwise)	During playback, turn the shuttle ring counter-clockwise slightly: this will rewind at a slower pace. Turn it slightly more for a faster pace. Continue turning to increase the rewind speed.	
Manual Playback Frame by Frame	In playback mode, push the play/pause button, then slowly turn the jog dial clockwise to advance frame-by-frame, counter-clockwise to move back frame-by-frame.	

4.3.2.8 Backward playback and frame by frame playback

Button	Illustration	Remarks
Backward play ◀ in playback interface.	In normal playback mode, left-click the backwards play button. The system will begin backward playback. Click backwards play button again, and the video will pause	When system is in backward play or frame-by-frame playback mode, Push the play button to go to normal playback.
Manual playback frame by frame.	In playback mode, push the pause button, then slowly turn the jog dial clockwise to advance frame-by-frame, counter-clockwise to move back frame-by-frame.	

Note: All the operations here (such as playback speed, channel, time and progress) have relationship with hardware version. Certain series of DVRs may not support some functions or playback speeds.

4.3.3 Calendar

Click calendar icon  in Figure 4-10, system pops up calendar for reference. The highlighted date means that there are recorded files for that day. Click blue date to view file list. In Figure 4-11, there are video files in December 17th and 21st. Double-click date to view file list.



Figure 4-11

4.4 Record Setup (Schedule)

When the system boots up, it is by default set to 24-hour regular mode. Set record type and time in schedule interface.

4.4.1 Schedule Menu

In the main menu, go to DVR Setting, then go to Schedule menu. See Figure 4-12. There are three record types: R-Regular, MD-Motion detection, A- Alarm. In some series, system also supports C-Card)

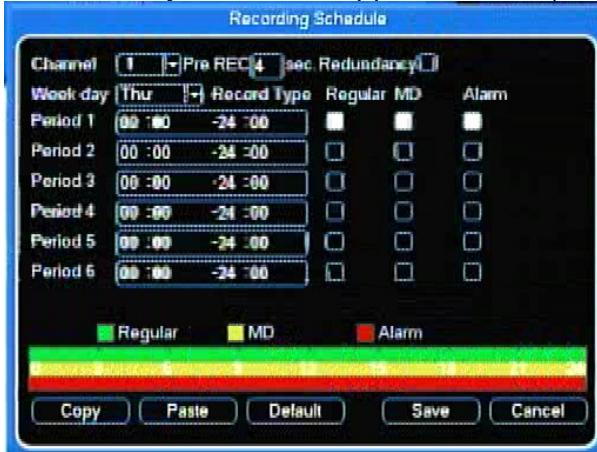


Figure 4-12

4.4.2 Basic Operation

There are totally six periods. See Figure 4-12.

- Channel: Please select the channel number first. Then select “all” to set for the whole channels.
- Day: There are eight options: Ranging from Saturday to Sunday and “all”.
- Redundancy: System supports redundancy backup function. Highlight Redundancy button to activate this function. Please note, before enable this function, please set at least one HDD as redundant. Refer to the manual for detailed information.
- Prerecord: System supports prerecord function. The previous one to three seconds video before alarm occurs can be included in recorded video.
- Record types: There are three types: regular, motion detection (MD) and Alarm.

Please highlight icon to select the corresponding function. Then click the save button, the system will go back to the previous menu. At the bottom of the menu, there is a color bar for reference. Green stands for regular recording, yellow stands for motion detection and red stands for alarm recording.

4.4.1.1 Quick Setup

This function allows copying one channel setup to another. After setting in channel 1, click the copy button and turn to channel 2 and then click paste button. After finishing the setting for one channel, change to another channel or finish all setup by clicking the Save button to save all the settings.

4.4.1.2 Redundancy

Redundancy function allows the saving of record file in several disks. These files are created, packaged and closed simultaneously. When there is file damage occurred in one disk, there is a duplicate one stored on the other disk. Use this function to maintain data reliability and safety. In the main menu, from Setting to Schedule, highlight redundancy button to enable this function. See Figure 4-12. In the main menu, from

Advanced to HDD management, set one or more disk(s) as redundant. Select from the dropdown list. See Figure 4-13. The system auto overwrites old files once the hard disk is full. Please note only read/write disk or read-only disk can backup file and support file search function, so at least one read-write disk should be set otherwise video will not be recorded.

Note:

About redundancy setup please note:

- If the current channel is not recording, the current setup gets activated when the channel begin recording the next time.
- If the current channel is recording now, the current setup will get activated right away, the current file will be packed and form a file, then system begins recording as it have just been set.

After it's setup correctly then click save button, the system will go back to the previous menu.



Figure 4-13

Playback or search in the redundant disk.

There are two ways to playback or search in the redundant disk.

- Set redundant disk(s) as read-only disk or read-write disk (Main menu->Advanced->HDD management). See Figure 4-13. System needs to reboot to get setup activated. Now search or playback file in redundant disk.
- Remove the disk and play it in another PC.

4.5 Motion Detect

4.5.1 Go to Motion Detect Menu

In the main menu, from Setting to Detect, see motion detect interface. See Figure 4-14.

4.5.2 Motion Detect

Detection menu is shown as below. See Figure 4-14.

- Channel: select the channel to implement motion detection.
- Type: in the dropdown list, select motion detection item.
- Record channel: select the channel to activate recording function once alarm occurred. Please make sure to set MD record in encode interface(Main Menu->Setting->Schedule) and schedule record in manual record interface(Main Menu->Advanced->Manual Record)
- Enable tour: to activate tour between different cameras.
- Latch: when motion detection complete, system auto delays detecting for a specified time. The value ranges from 10-300(Unit: second)

- PTZ preset: Click set button, the interface is shown as in Figure 4-15. Set preset for one or more channels.
- Region: click “select” button to set motion detection region. See Figure 4-16.
- Sensitivity: There are six levels. The sixth level being the most sensitive.
- Alarm output: When alarm occurred, system enables peripheral alarm devices.
- Show message: System pops up message in the screen once alarm occurs.

Please highlight icon to select the corresponding function. After completing the setup, select the save button. The system will then go back to the previous menu.

Note:

In motion detection mode, copy/paste to set channel setup is disabled since the video in each channel may not be the same. In Figure 4-15, left click mouse and then drag it to set a region for motion detection. Push AUX to switch between deployments and withdraw motion detection. After setting, click enter button to exit.

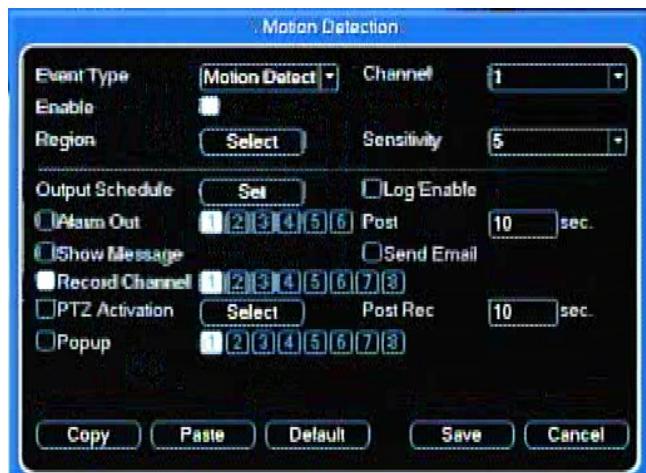


Figure 4-14

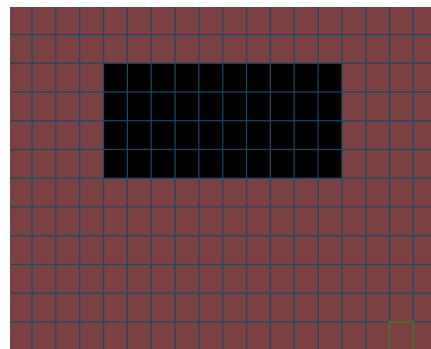


Figure 4-15



Figure 4-16

4.5.3 Video Loss

In Figure 4-14, select video loss in the Type item. See the interface shown as in Figure 4-17. This function allows the user to be informed when video loss has occurred. The can enable alarm output channel and then enable the show message function.

- Channel: Select the channel to enable the lens shading alarm.
- Type: Select video loss.
- Record channel: Select the channel to record when video loss occurred.
- Alarm output: Activate peripheral alarm device when video loss occurred.
- Enable tour: This will allow the user to activate a tour between different cameras.
- Latch: When motion detection completes, system auto delays detecting for a specified time. The value ranges from 10-300 seconds.
- PTZ Linkage: Click set button to set the preset for one or all channels. See Figure 4-16.
- Period 1/2: Will allow the user to set two time periods (00.00-24.00).
- Alarm output: When video loss has occurred, the system enables peripheral alarm devices. Please highlight icon to enable this function
- Show message: System pops up a message in the screen to alert the user once an alarm has occurred. Highlight the icon to enable this function.



Figure 4-17

4.5.4 Camera Mask Detect

When someone viciously masks lens, the system can alert the user to guarantee video continuity. Camera mask detection interface is shown as in Figure 4-18.

- Channel: Select the channel to enable camera mask detection.
- Type: Select camera mask detect from the dropdown list.
- Record channel: Select the channel to record when camera mask has occurred.
- Alarm output: Activate peripheral alarm device.
- Enable tour: This will allow the user to activate a tour between different cameras.
- Latch: When motion detection completes, system auto delays detecting for a specified time. The value ranges from 10-300 seconds
- PTZ preset: Click set button to set preset for one or all channels. See Figure 4-16.
- Period 1/2: Will allow the user to set two time periods (00.00-24.00).

- Alarm output: When camera masking has occurred, the system enables peripheral alarm devices. Select this icon to enable this function
- Show message: System pops up message in the screen to alert the user once an alarm occurred. Please highlight icon to enable this function

Note: In this interface, the copy/paste function is only valid for the same type, which means it can not copy a channel setup in video loss mode to camera mask detect mode.

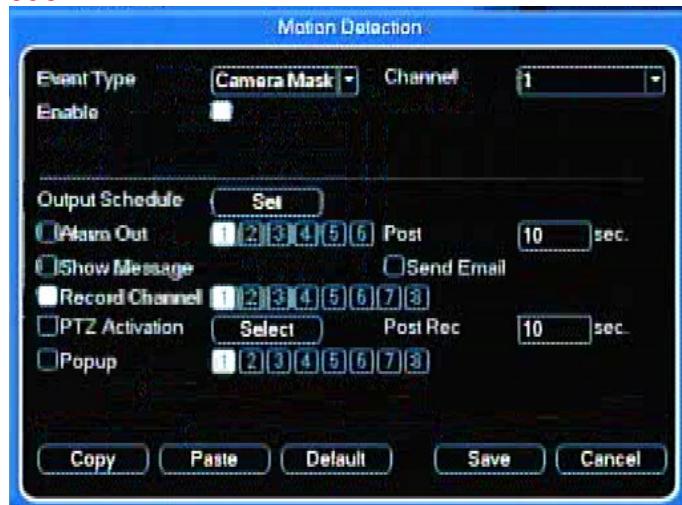


Figure 4-18

4.6 Alarm Setup and Alarm Activation

Before operation, please make sure any alarm devices such as a buzzer has been properly connected.

4.6.1 Go to alarm setup interface

In the main menu, go to Setting and then Alarm, see the alarm setup interface. Figure 4-19.

4.6.2 Alarm setup

Alarm interface is shown as below. See Figure 4-19.

- Alarm in: Select the channel number here.
- Source of alarm: There are two types of alarm sources local, and network input.
- Type: Normally open or normally closed.
- Record channel: Select the proper channel(s) to record alarm video. At the same time the setting for alarm recording in the schedule interface (Main Menu->Setting->Schedule) and select schedule record in the manual record interface (Main Menu->Advance->Manual Record) is needed.
- Latch: This allows the setting of proper delay duration. Value ranges from 10 to 300 seconds. The system will automatically delay for the specified time in turning off alarm and activated output after external alarm has been cancelled.
- PTZ preset: This allows the activation of the PTZ control.
- Relay out: Select the proper alarm activation output channel(s).
- Show message: System pops up a message in the screen to alert the user once an alarm has occurred.
- Period 1 and period 2: Set proper time and alarm tips.

Please highlight icon to select the corresponding function. After completing setup please click save button, the system will go back to the previous menu.

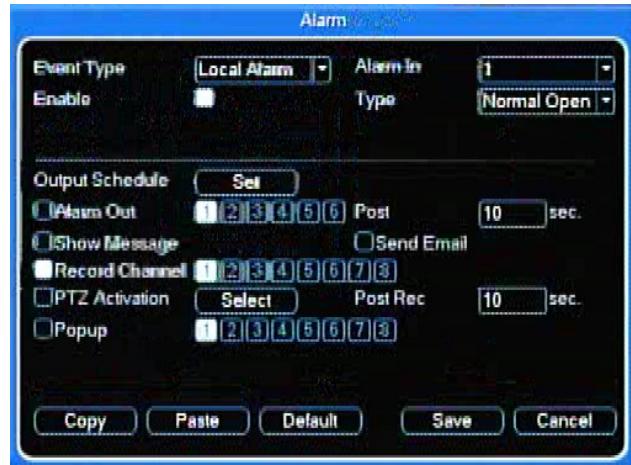


Figure 4-19

4.7 Backup

Click backup icon in the main menu, there are two function items: Detect device and backup files.

4.7.1 Detect Device

View device information. Figure 4-20.

Detect Device			
	Device type	Description	Total capability
1	DISK (Dev1)	USB	1.00 GB

◀ Page Up
▶ Page Down

Figure 4-20

4.7.1 Backup

Select backup device, channel, start time, and end time. Click the add button, system will begin searching. All matched files will be listed below. System will automatically calculate the capacity needed. See Figure 4-21. The systems will only backup files with a √ before channel name. Use AUX or left- click button to remove the √. When the system completes the backup procedure, a dialogue box prompting for confirmation of a successful backup will appear.

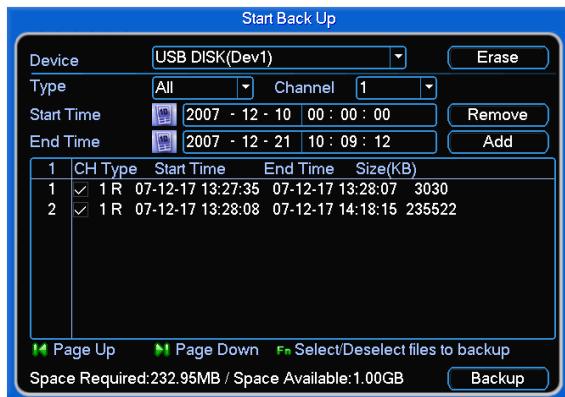


Figure 4-21

Select the backup button, to backup the selected files. This will start the burning process. At this time, the “Backup” button will change to a “stop” button. View the remaining time and process bar at the bottom left. See figure 4-22.

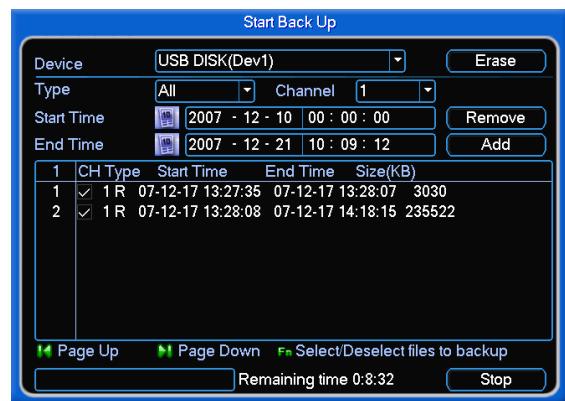


Figure 4-22

Tips: During backup process, clicking ESC will exit current interface, but the system will not terminate backup process.

When clicking the stop button during the burning process, two conditions for different devices will happen:

- CD/DVD burner device, the stop function will discontinue backup process, and no data will be accessible on the disk.
- USB devices, the system can backup the data after clicking stop button. For example, if there is a 10 minutes file, when clicking the stop button after five minutes of backup, the previous 5-minute of data will be save in the device.

The file name format usually is SN_CH+channel number+timeY+M+D+H+M+S. The Date format is the same as what is set in the System (Main Menu>DVR Setting>System).

4.8 PTZ Control and Color Setup

Note: All operation here is based on DH-SD protocol. For PELCO protocols, there might be slight differences.

4.8.1 Cable Connection

Please follow the procedures below to go on cable connection

- Connect the dome RS-485 port to DVR RS-485 port.
- Connect dome video output cable to DVR video input port.

- Connect power adapter to the dome.

4.8.2 PTZ Setup

Note: The camera video should be in the current screen. Before setup, please check the following connections are correct:

- PTZ and decoder connection is correct. Decoder address is correctly setup.
- Decoder A (B) line connects with DVR A (B) line.

Boot up the DVR, input user name and password. In the main menu, click setting, and then click Pan/Tilt Control button. The interface is shown as in Figure 4-23. Set the following items:

- Channel: Select the current camera channel.
- Protocol: Select corresponding PTZ protocol (such as DH-SD1)
- Address: Default address is 1.
- Baud rate: Select corresponding baud rate. Default value is 9600.
- Data bits: Select corresponding data bits. Default value is 8.
- Stop bits: Select corresponding stop bits. Default value is 1.
- Parity: There are three options: Odd/even/none. Default setup is none.

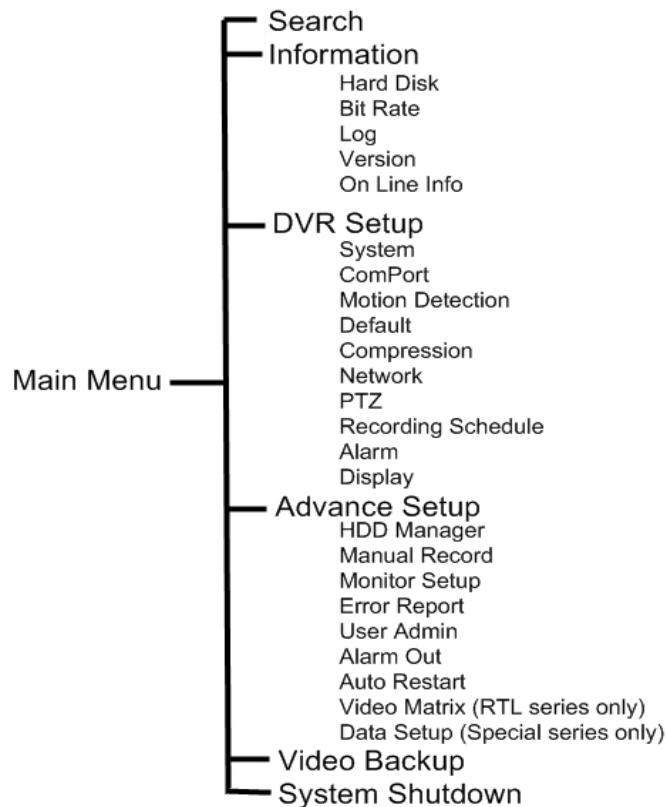


Figure 4-23

5 Menu Operations and Controls

5.1 Menu Tree

This series DVR menu tree is shown as below.



5.2 Main Menu

When login, the system main menu shows as below. Figure 5-1. There are six icons in total: Search, Information, Setting, Advanced, Backup and Shutdown. Move the cursor to highlight the icon, then left-click to enter the sub-menu.

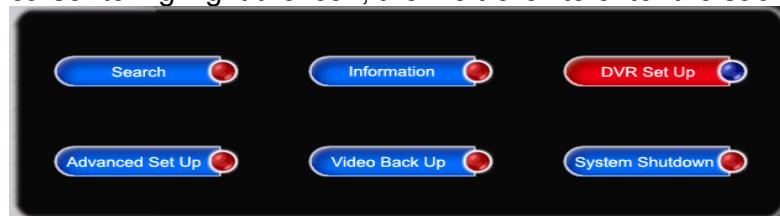


Figure 5-1

5.3 Setting

In main menu, highlight the setting icon and double-click with the mouse. The system setting interface is shown as below. See Figure 5-2.



Figure 5-2

5.3.1 General

General setting includes the following items. See Figure 5-3.

- System Time: This allows the setting of the system time and date.
- Date Format: (Toggle between three date formats) YYYY-MM-DD, MM-DD-YYYY, or DD-MM-YYYY.
- Date Separator: (There are three denotations to separate date) Dot, hyphen, and forward-slash.
- Time Format: (There are two types) 24-hour mode, or 12-hour mode.
- Language: Chinese (simplified), Chinese (Traditional), English, Italian, Japanese, French, Spanish (All languages listed here are optional. Slight difference maybe found in various series.)
- HDD Full: (Choose what to do, when the hard disk is full) Stop recording or rewrite.
- Pack Duration: Specify recording duration. (Default: 60 minutes)
- DVR No: when using one remote control to control several DVRs, give the DVR a number to manage each one.
- Video Standard: (Two formats) NTSC and PAL.
- Auto Logout: Set an auto logout interval once a logged-in user remains inactive for a specified time. Ranges from 0 to 60 minutes. (Default: 10 minutes)

Note: Since system time is very important, do not modify time casually, unless there is a need to do so.

After completing setup select the save button, this will go back to the previous menu.



Figure 5-3

5.3.2 Compression

Compression settings include the following items. See Figure 5-4.

- Channel: Select the channel.
- Compression: system supports H.264. Or select from the dropdown list. (Default: H.264)
- Resolution: This is the resolution used for recording, this model supports D1 (480x330), or CIF (240x162). (Default: CIF)
- Bit rate: system supports two types: CBR and VBR.
- Bit rate: system supports two types: CBR and VBR.
 - CBR settings can be adjusted from 224 ~ 4096
 - VBR quality settings can be adjusted from 1 ~ 6

- Frame rate: (NTSC) 1 f/s, 2 f/s, 4 f/s, 7f/s, 15f/s, 20f/s, 30f/s (PAL) 1 f/s, 2f/s, 3f/s, 6f/s, 12f/s, 25f/s. (NTSC Default: 30f/s) (PAL Default: 25f/s)
 - Enable audio: Turn audio recording on or off.
 - Cover area (Privacy mask): Set a window blanking section. Drag the mouse to set proper section size.
 - Time display: Used to display the time in recorded videos.
 - Channel display: Used to display the channel number in recorded videos.
- Please highlight icon to select the corresponding function.



Figure 5-4

5.3.3 Schedule

Please refer to chapter 4.4 Schedule.

5.3.4 Com Port

RS232 interface is shown as below. Here are five items. See Figure 5-5.

- Function: There are various devices that can be selected.
- Baud Rate: Select proper baud rate.
- Data Bits: Select proper data bit.
- Stop Bits: There are three values: 1/1.5/2.
- Parity: There are three choices: None/Odd/Even.

After setup is complete select the save button to go back to the previous menu.

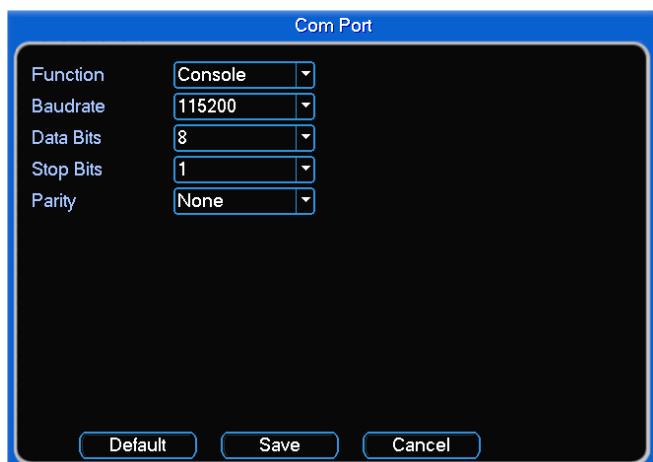


Figure 5-5

5.3.5 Network

Input network information. See Figure 5-6.

- IP address

- Subnet mask
- Gateway
- Service port: Default port is 4000. (System server port 4001 is reserved for network UDP use.)
- HTTP port: Default value is 80
- Protocol: Select proper protocol from the dropdown list.
- Max connections: Amount of connections allowed, up to 10.
- Properties: There are three options: FTP/NTP/Alarm center. Select one of the three and then click properties button to go to setup interface.
- Authorization: Click authorization button please highlight icon to enable IP authentication function. When this function is enabled, only IP in the list can login this DVR. See Figure 5-7.

After completing the setup select the save button, to go back to the previous menu.

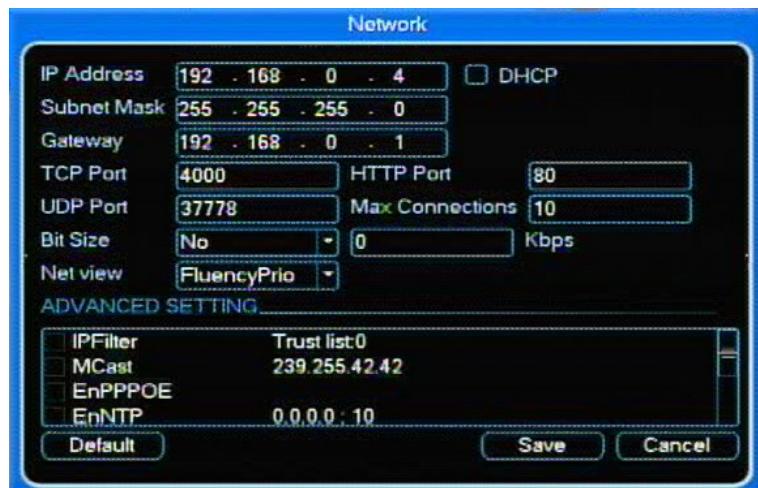


Figure 5-6

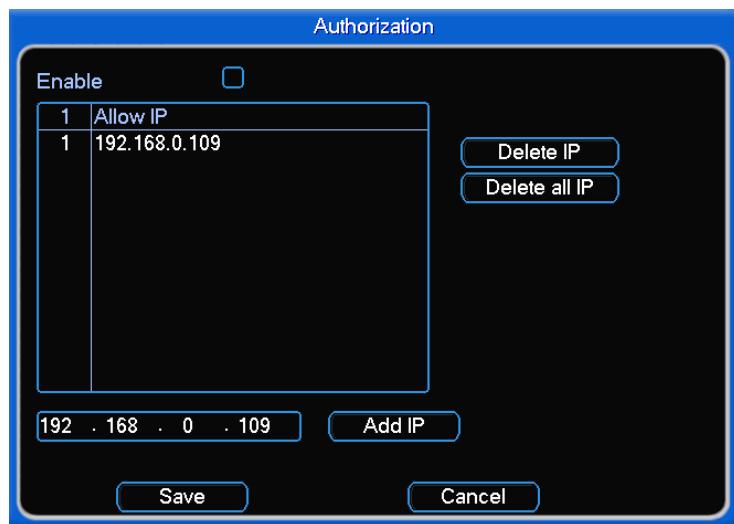


Figure 5-7

5.3.5.1 PPPoE Connection

Enable PPPoE function and then input “PPPoE name” and “PPPoE password” that was provided by the ISP (Internet Service Provider). Select

the save button, the dvr will need to restart to activate the configuration. After rebooting, IP camera will connect to Internet automatically. The IP in the PPPoE is the dynamic value.

5.3.5.2 Web connect via Network

There are two ways.

- Connect via current IP

After DVR has connected to the Internet by PPPoE, get the device's current IP in Figure 5-6. Now the DVR camera can be viewed via IP.

- Connect via DDNS

A PC that has fixed IP in the Internet and the DDNS software running in this PC is needed. In other words, this PC is a DNS (domain name server).

In network DDNS, input the PPPoE name from the IPS and server IP (PC with DDNS).

Click the Save button, system prompts for reboot to get all setup activated.

After rebooting, open IE and input as below:

`http://(DDNS server IP)/(virtual directory name)/webtest.htm`
(ex. `http://10.6.2.85/DVR _DDNS/webtest.htm`)

Now DDNServer web search page can be opened.

5.3.5.3 FTP

Download or buy an FTP service tool (Such as Serv-U FTP SERVER) to use the FTP service. Please install Ser-U FTP SERVER first. From "Start" -> "Programs" -> "Serv-U FTP Server" -> "Serv-U Administrator". Now set the user passwords and FTP folder. **Note:** Grant write permissions to the FTP upload user. See Figure 5-8.

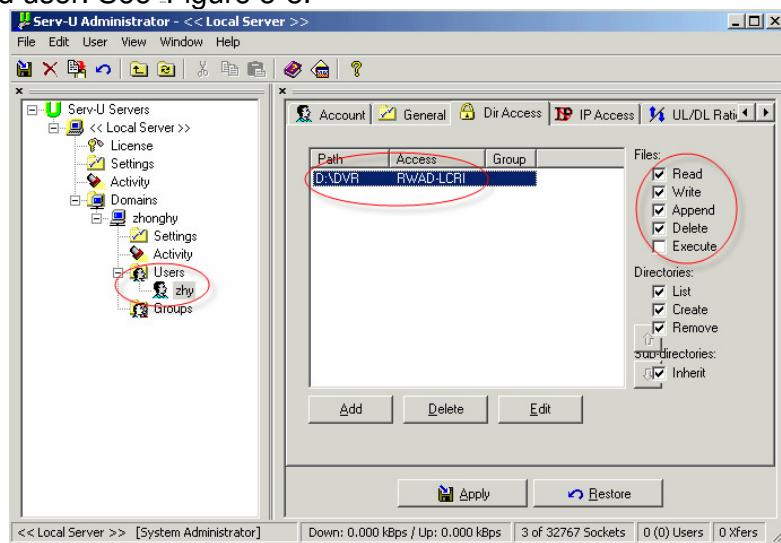


Figure 5-8

Use a PC or FTP login tool to test if it is setup correctly. For example, login user ZHY to <FTP://10.10.7.7> and then test if it can modify or delete folders. See Figure 5-9.

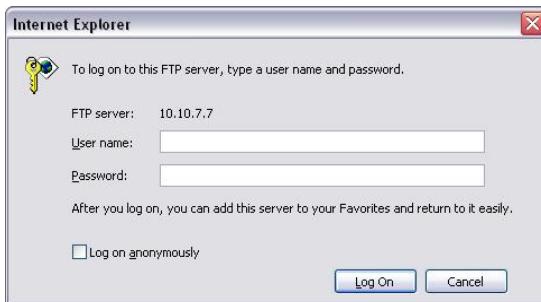


Figure 5-9

System also supports uploading multiple DVRs to one FTP server. Create multiple folders under this FTP. In Figure 5-6, select FTP and then select the properties button. See Figure 5-10 for more information on the interface.

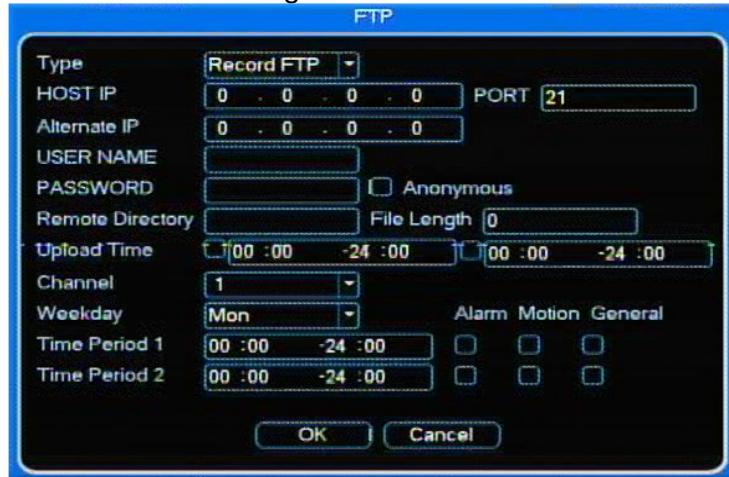


Figure 5-10

Please highlight the icon in front of Enable to activate FTP functionality. The DVR can now upload alarm video and motion detection video via FTP. Please note, when using this function, please make sure current upload channel is in motion detection or alarm record status and there is video available. Input FTP server address, port and etc.

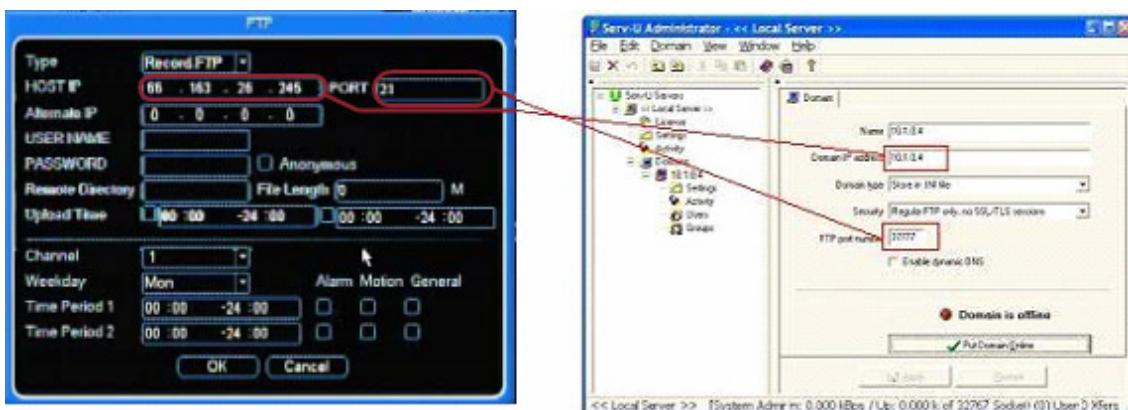


Figure 5-11

- File length: Upload files length. When video is smaller than the actual file length, it will upload the whole file. When video is larger than the actual file length, it will only upload the set length and ignore the remaining section.

- When interval value is 0, system uploads all corresponding files.
- Period 1 and Period 2: Two periods for each channel can be set. System file name is shown as in Figure 5-12.



Figure 5-12

5.3.5.4 NTP

SNTP server (Such as Absolute Time Server) in the PC must be installed first. In Windows XP OS, command “net start w32time” can be used to boot up NTP service. In Figure 5-6, select NTP and then click properties button. See the following interface. See Figure 5-13.

- Host IP: Input the PC address.
- Port: This series DVR supports TCP transmission only. Default port value is 123.
- Update interval: minimum value is 15 (Unit: Minutes)
- Time zone: select the corresponding time zone.

Here is a time zone reference table to refer to when selecting the correct area.

City /Region Name	Time Zone
London	GMT+0
Berlin	GMT+1
Cairo	GMT+2
Moscow	GMT+3
New Delhi	GMT+5.30
Bangkok	GMT+7
Beijing (Hong Kong)	GMT+8
Tokyo	GMT+9
Sydney	GMT+10
Hawaii	GMT-10
Alaska	GMT-9
Pacific Time(P.T)	GMT-8
American Mountain Time(M.T)	GMT-7
American Central Time(C.T)	GMT-6
American Eastern Time(E.T)	GMT-5
Atlantic Time	GMT-4
Brazil	GMT-3
Middle Atlantic Time	GMT-2



Figure 5-13

5.3.6 Alarm

Please refer to chapter 4.6 Alarm Setup and Activation.

5.3.7 Detect

Please refer to chapter 4.5 Detect.

5.3.8 Pan/Tilt/Zoom

The pan/tilt/zoom setup includes the following items. Please select channel first. See Figure 5-14.

- Protocol: Select corresponding PTZ protocol such as DH-SD1.
- Address: Input corresponding PTZ address.
- Baud rate: Select baud rate.
- Data bit: Select data bit.
- Stop bit: Select stop bit.
- Parity: There are three choices: None/Odd/Even.

After completing setup select the save button, this will go to the previous menu.

For detailed setup information, please refer to chapter 4.9 preset/patrol/pattern/scan.



Figure 5-14

5.3.9 Display

Display setup interface is shown as below. See Figure 5-15.

- Transparency: Here the menu transparency can be adjusted. The value ranges from 128 to 255.
- Channel name: Here the channel name can modified. Please note any modifications here only apply locally to the DVR. The opening of the web or client end is needed to refresh the channel name.
- Time display: Toggle if time is to be displayed.
- Channel display: Toggle if the channel name is to be displayed.
- Overlay information: System displays some information in the screen for reference.
- Enable tour: Activate tour function.
- Interval: Change the time each channel is shown in Tour mode. The value ranges from 5-200 seconds. In tour process, use the mouse or click Shift to turn on window switch function.  Stands for opening switch function,  stands for closing switch function.
- View1/4/9/16: System support 1/4/9/16 window tour.
- Display: Auto / VGA /TV controls video output for displaying the DVR interface.

Please highlight icon  to select the corresponding function.

After completing setup select the save button, this will go to the previous menu.

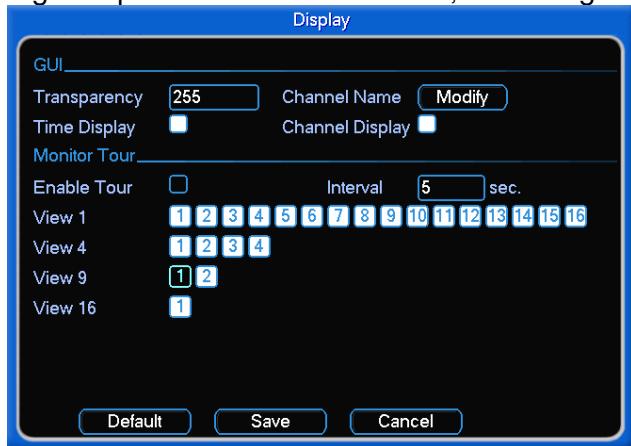


Figure 5-15

5.3.10 Default

Click default icon, system pops up a dialogue box. Highlight to restore factory default setup. See Figure 5-16.

- Select all
- General
- Encode
- Schedule
- RS232
- Network
- Alarm
- Detect
- Pan/tilt/zoom
- Display
- Channel name

Please highlight icon to select the corresponding function.

After completing setup select the save button, this will go to the previous menu.

Warning: System menu color, language, time display mode, video format, IP address, user account will not maintain previous setup after default operation!

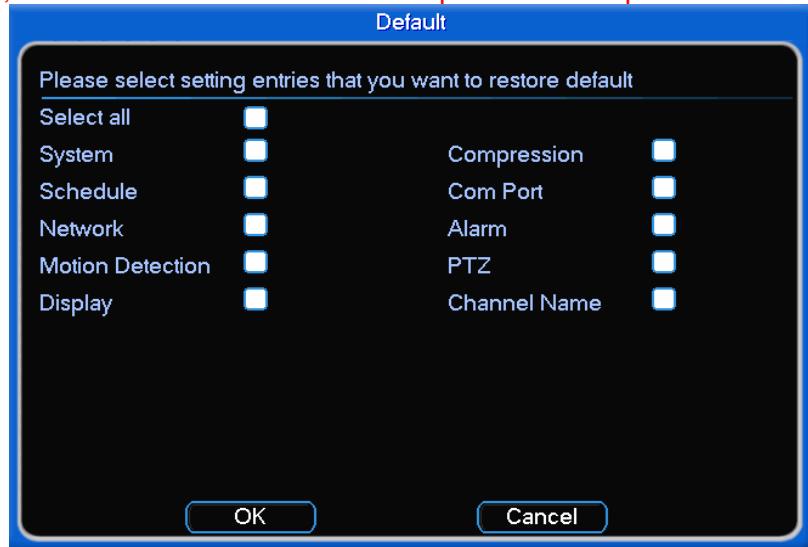


Figure 5-16

5.4 Search

Please refer to chapter 4.3 Search.

5.5 Advanced

Double-click the advanced icon in the main window, the interface below will be shown. See Figure 5-17. There are seven function keys: Hard Disk Management, Alarm Output, Alarm Input, Manual Record, Account, Auto Maintain, and TV Adjust.



Figure 5-17

5.5.1 Hard Disk Management

Here the viewing and implementing of the hard disk management can be done. Figure 5-18. Set the proper mode for each hard disk from the dropdown list. When using redundant backup function, set one or more redundant HDD(s). Please note that at least one read-write disk is needed, otherwise the system will not record video. For detailed information refer to chapter 4.4 Schedule. After completing setup select the save button, the system will need to reboot to perform any changes.

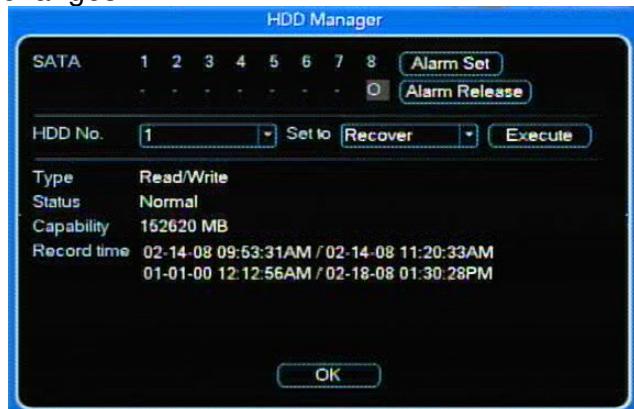


Figure 5-18

Select the “Alarm Set” button, the interface is shown as below. See Figure 5-19.

Please highlight icon to select the corresponding function. One or more alarm setups can be enabled. The lower limit ranges from 1% to 99%. Alarm channel number ranges from 1 to 6. Delay value is from 0 to 240 seconds. Please note when HDD capacity is low the system will show an alarm once! After completing setup select the OK button, this will go to the previous menu.

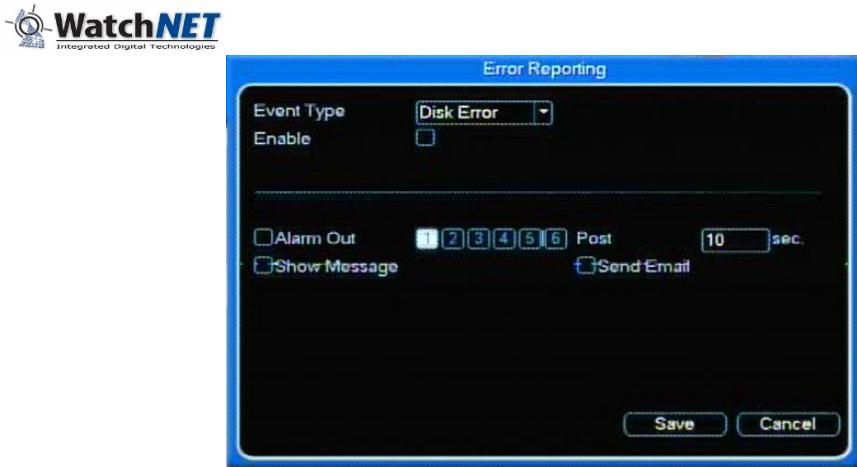


Figure 5-19

5.5.2 Alarm Output

Setting up proper alarm output can be found here. Please highlight icon to select the corresponding alarm output. After completing setup select the OK button, this will go to the previous menu. See Figure 5-20.



Figure 5-20

5.5.3 Manual Record

Please refer to chapter 4.2.2 Manual Record.

5.5.4 Account

User accounts can be managed here. See Figure 5-211:

- Add new user
- Modify user
- Add group
- Modify group
- Modify password.

For account management please note:

- System account adopts two-levels of management: group and user. No limit to group or user amount.
- For group or user management, there are two levels: admin and user.
- The user name and group name can consist of eight bytes. One name can only be used once. There are three default users: admin/user and hidden user "default".
- Hidden user "default" is for system interior use only and cannot be deleted. When there is no login user, hidden user "default" automatically login. Setting some rights such as monitor for this user so that viewing some channels is possible without login.
- One user should belong to one group. User right cannot exceed group right.
- About reusable function: this function allows multiple users use the same account to login.

User Admin			
	User	Group	Status
1	admin	admin	Normal
2	default	user	Default User
3	user	user	Normal

Figure 5-21

5.5.5 Auto Restart

Scheduling an auto-reboot time and auto-delete for old files setup is found here. See Figure 5-222. Select proper setup from dropdown list.

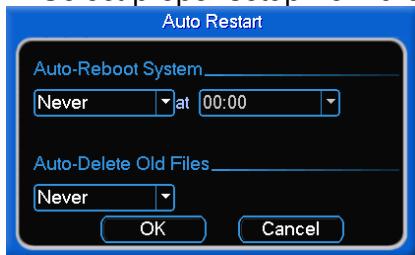


Figure 5-222

5.5.6 TV Adjust

Adjustments for TV output setup can be found here. See Figure 5-233. Drag slide bar to adjust each item. After completing setup select the OK button, this will go to the previous menu.

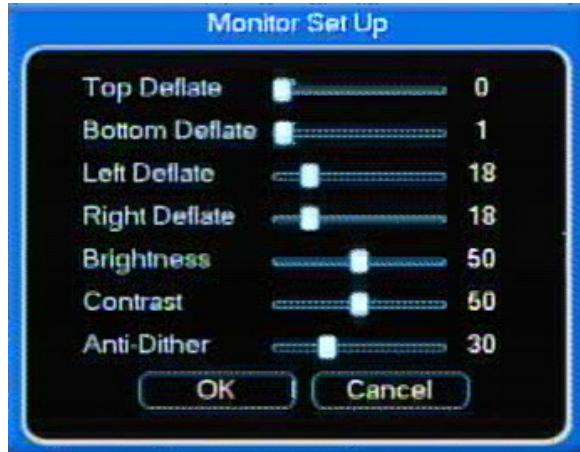


Figure 5-233

5.5.7 Video Matrix (For RTSL Series and RTSH Series)

Some series DVR have the matrix and loop outputs.

5.5.7.1 Loop outputs

They are just the same with video distributors. There are 16-ch video loop outputs from our DVR. The DVR video output can connect with other devices such as TV walls, analog matrix and so on.

5.5.7.2 Matrix outputs

Select any camera from the DVR to switch. The output can also tour

between the cameras. So the matrix outputs can be used, for front TV's, to tour and display the cameras.

5.5.7.3 Rear Panel Connection

The rear panel is shown as below. See Figure 5-244.

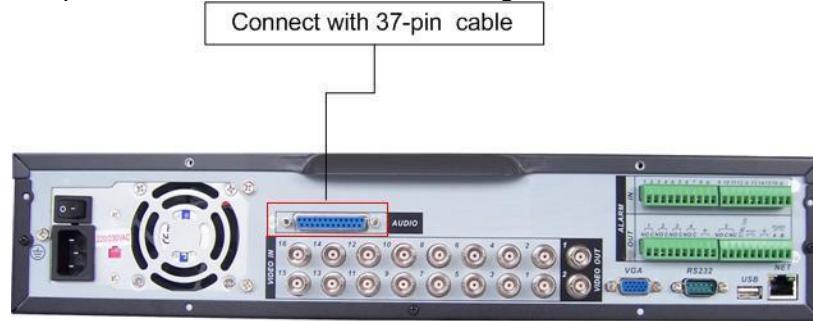


Figure 5-244

5.5.7.4 37-pin cable introduction

There are three colors cable. See Figure 5-255.

Note: RTSL 16ch video out, 4 matrixes, no audio in
 RTSLH 16ch video out, 1 Matrix, 4 audio in.

- Black: for loop outputs, there are 16-ch loop outputs
- Blue: for matrix outputs, there are 4-ch matrix outputs
- White: for bi-direction talk, one is for audio in and the other is for audio out.



Figure 5-255

5.5.7.5 Matrix setup

5.5.7.5.1 Enter the Menu of Video Matrix

In the menu, from “Advanced” to “Video Matrix”. See Figure 5-266.



Figure 5-266

5.5.7.6 Video Matrix Interface and Application

The video matrix interface is shown as in Figure 5-278. Now RTSL series support 4-channel matrix outputs and RTSLH series support 1 channel matrix output. All the operation below is based on RTSL series DVR.

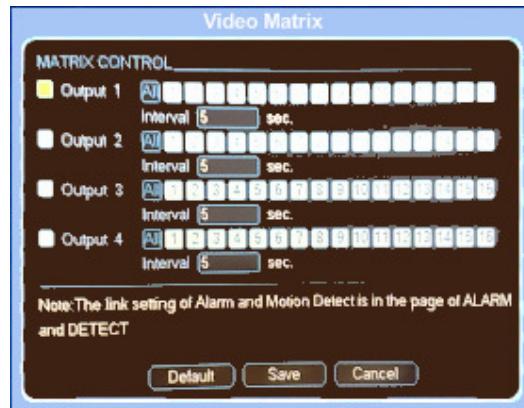


Figure 5-278

A. Single Tour

Please enable tour function. Then set interval time and select corresponding cameras. Select “ALL” to tour between all channels.

B. Alarm

Select the “Alarm In” channel number from the dropdown list. If there is an alarm signal from the channel selected, the matrix output will go to tour as was set in the “Alarm” setting (Main Menu->Setting->Alarm). See Figure 5-28. Alarm tour has higher priority than single tour during this period, single tour will stop. After alarm activation tour, the matrix output will continue single tour.



Figure 5-28

5.5.7.7 Examples

A. Example one

In Figure 5-290, matrix outputs “1”, “2”, “3” tour between all cameras of the DVR. Matrix output 4 tours between “CAM1, CAM6 and CAM7” of the DVR. The interval is five seconds each.

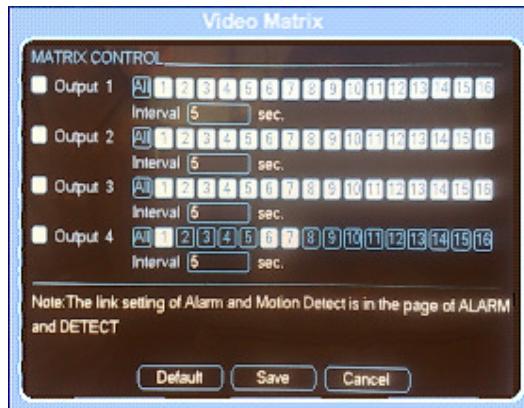


Figure 5-290

B. Example two

In Figure 5-301, when alarm occurs in channel one, the activated matrix output one begins touring between CAM1, CAM6 and CAM7 of the DVR until alarm activation tour stops.

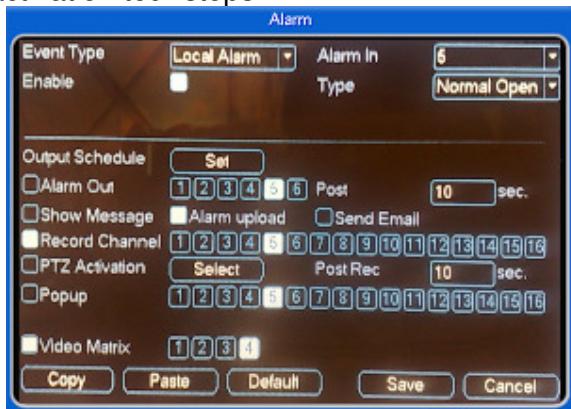


Figure 5-301

5.6 Information

System information can be viewed and edited here. There are five items in total: HDD (Hard Disk Information), BPS (Data Stream Statistics), Log, Version, and Online Users. See Figure 5-312.

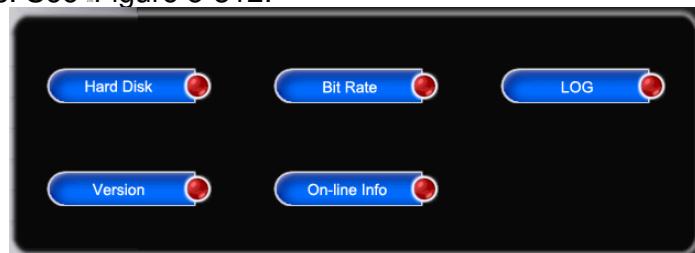


Figure 5-312

5.6.1 Hard Disk Information

This section lists hard disk type, total space, free space, video start time and status. See Figure 5-323.

Note:

Please remove any defective hard disks before adding a new one. If there is a hard disk conflict, please check that hard disk time and system time are the same. Please go to "DVR Setup" then "System" to modify system time. Then, reboot the system to solve this problem. In IDE information column, "O" means OK / "X"

means error occurred / “-“means there is no disk. The serial number after the disk information such as “O”, which means it is current working disk. If disk is damaged, system shows as “?”



Figure 5-323

5.6.2 BPS

View the current video data streams (KB/s) and occupied hard disk storage (MB/h). See Figure 5-334.

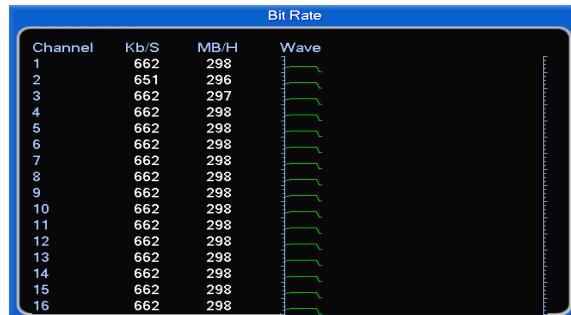


Figure 5-334

5.6.3 Log

Systems log file can be viewed here. System would list the following information. See Figure 5-345.

LOG		
Type	All	
Start Time	2007 - 12 - 26 00 : 00 : 00	
End Time	2007 - 12 - 27 00 : 00 : 00	<input type="button" value="Search"/>
2	Log Time	Event
1	07-12-26 10:34:27	Shut down at [07-12-26 10:34:27]
2	07-12-26 10:34:27	Reboot with Flag [0x01]

Figure 5-345

5.6.4 Version

Version information can be seen here. See Figure 5-356.

- Channel
- Alarm In
- Alarm Out
- Version:
- Build Date
- Web Version
- Serial No.

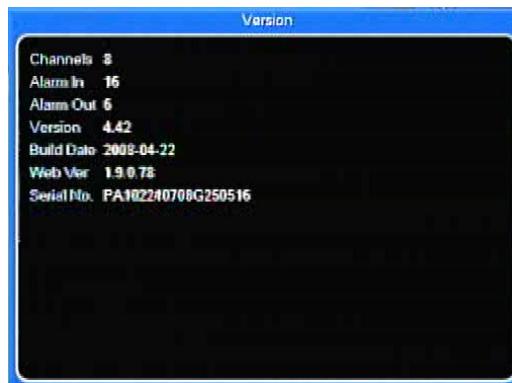


Figure 5-356

5.6.5 Online Users

Here online users can be managed. See Figure 5-367. Users can be disconnected or blocked here, if the login user has proper system privileges.

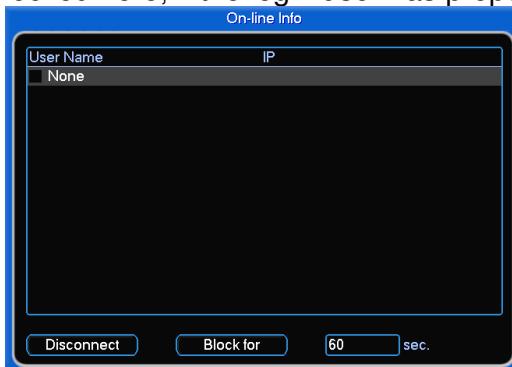


Figure 5-367

5.7 System Shutdown

Select “System Shutdown”, a pop-up dialogue box will appear. See Figure 5-378.

- Logout Menu User: Logs current user out. In next login the password would be needed.
- Restart Application: Restart the DVR application.
- Shutdown: Shuts down the DVR and turns off power.
- Restart System: Reboot the DVR

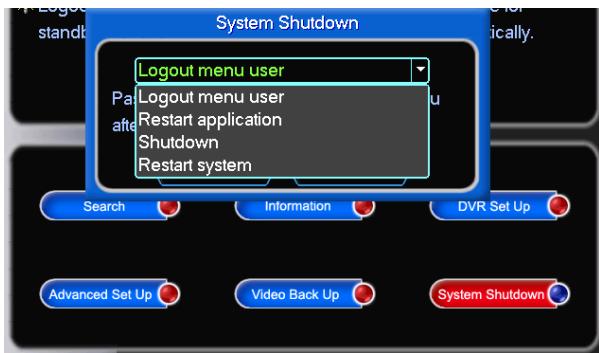


Figure 5-378

6 About Auxiliary Menu

6.1 Go to Pan/Tilt/Zoom Menu

Click Pan/Tilt/Zoom Icon, the PTZ interface is shown as Figure 6-1. Setting the following items by using the  and  icons can be done here.



- Zoom
- Focus
- Iris



Figure 6-1

In Figure 6-1, please click direction arrows (See Figure 6-1) to adjust PTZ position. There are eight direction arrows in total. (Please note there are only four direction arrows on the DVR front panel.) The PTZ Trace button, allows the precisely control of the PTZ by clicking and dragging the mouse in the direction that is needed.



Figure 6-1

6.1.1 AVT (Automatic Video Tracking)

In the middle of the eight direction arrows, there is a AVT. See Figure 6-2 . Click this button, and the system will go to single screen mode. Drag the mouse in the screen to adjust section size. This will utilize the PTZ automatically.



Figure 6-2

See the table on the next page for reference.

Name	Function	function	Shortcut	Function	function	Shortcut
Zoom		Near			Far	
Focus		Near			Far	
Iris		Close			Open	

6.2 Preset /Tour / Pattern /Border Function

In Figure 6-1 click the set button. The interface is shown as below: Set the following items here:

- Preset
- Patrol
- Pattern
- Border



Figure 6-3

In Figure 6-1, click page switch button, see the interface in Figure 6-4.
Activating the following functions can be found here:

- Preset
- Tour
- Pattern
- Aux On
- Aux Off
- Auto Scan
- Auto Pan
- Light On

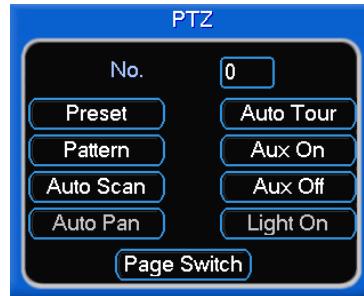


Figure 6-4

6.2.1 Preset Setup

Note: The following setup is usually operated by the menus in Figure 6-1, Figure 6-3 and Figure 6-4. In Figure 6-1, use the eight direction arrows to adjust camera to the proper position. In Figure 6-3, select the “Preset” button and input the preset number. The interface is shown in Figure 6-5. Now the preset can be added to one tour.



Figure 6-5

6.2.2 Activate Preset

In Figure 6-4 input the preset number in the “No.” blank, and select the “Preset” button.

6.2.3 Auto Tour Setup

In Figure 6-3, click “Auto Tour” button. The interface is shown as in Figure 6-6. Input preset number and then add this preset to one patrol.



Figure 6-6

6.2.4 Activate Tour

In Figure 6-4, input the patrol (Tour) number in the “No.” blank, and select the “Tour” button.

6.2.5 Pattern Setup

In Figure 6-3, select the “Pattern” button and then select the “Begin” button. The interface is shown in Figure 6-7. Go back to Figure 6-1 to modify zoom, focus, and iris. Go back to Figure 6-7 and click the “End” button. All these operations can be saved as pattern 1.

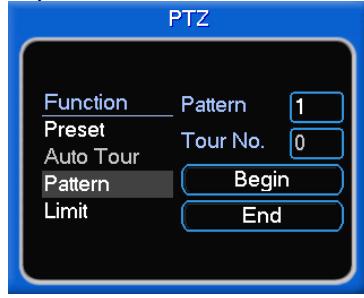


Figure 6-7

6.2.6 Activate Pattern Function

In Figure 6-4 input mode value in the “No.” blank, and select the “Pattern” button.

6.2.7 Border Limit Setup

In Figure 6-3, select the “Limit” button. The interface is shown as in Figure 6-8. Please go to Figure 6-1, use direction arrows to select camera left limit, and then please go to Figure 6-8 and click left limit button.

Repeat the above procedures to set right limit.



Figure 6-8

6.2.8 Activate Auto Scan

In Figure 6-4, click “Auto Scan” button, the system begins auto scan. Correspondingly, the “Auto Scan” button will change to a “Stop” button. Select the “Stop” button to terminate the scan operation.

6.3 Dome Menu Control

In Figure 6-4, select the “Page Switch” button, the interface is shown as below. See Figure 6-9 Select “menu” to enter the dome menu. The direction arrows here are to control the dome menu. Select the “Page Switch” button, the system will go back to Figure 6-1.



Figure 6-9

7 WEB CLIENT OPERATION

Please note, all the operations here in chapter seven are using a 16-ch DVR as an example. There might be slightly differences in the interface due to different series.

7.1 Network connection

Before web client operation, please check the following items:

- Network connection is correctly setup
- DVR and PC network is setup correctly. Please refer to network setup (Main menu->setting->network).
- To test, try to ping ***.***.***.*** (***) being the DVR's IP address) to check the connection. Usually the return TTL value should be less than 255.

7.2 Login and logout

Open IE and input the DVR address in the address column. For example, if the DVR IP is 10.1.27.200, then please input <http://10.1.27.200> in the address column.

Note: A warning may pop-up asking to want to install webrec.cab control. Click the yes button. If downloading the ActiveX control fails, please modify the settings as follows.

See Figure 7-1.

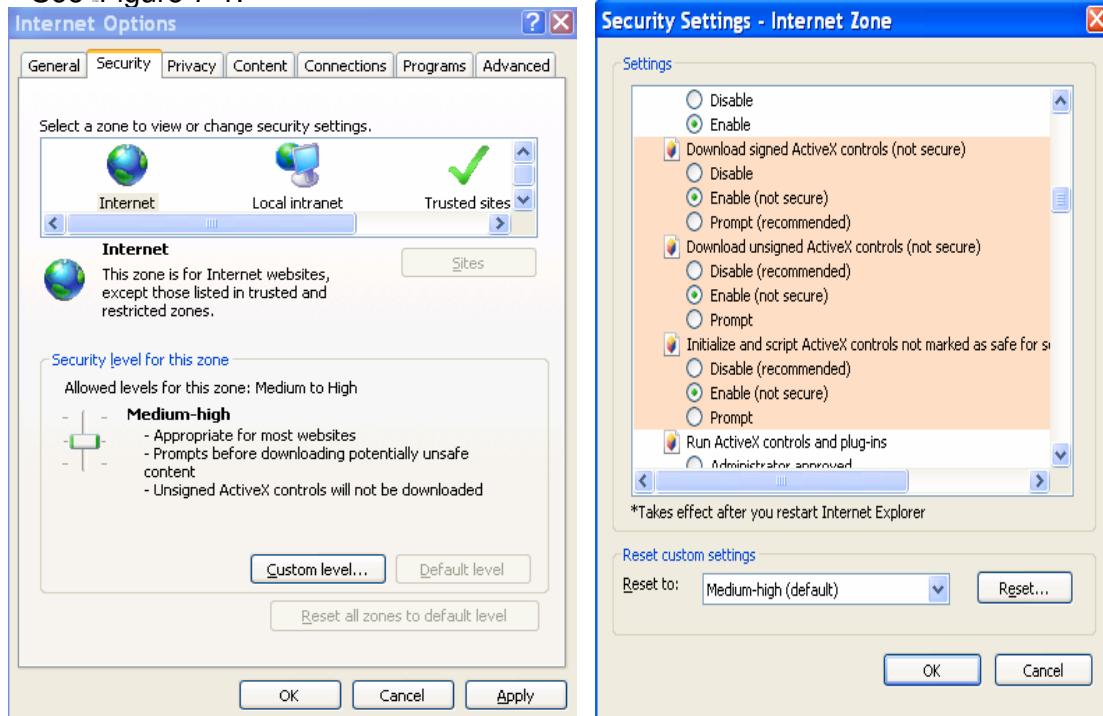


Figure 7-1

Note: If using Windows Vista, please make sure to un-check User Account Control (UAC).

After installation, the interface is shown as below. See Figure 7-2.

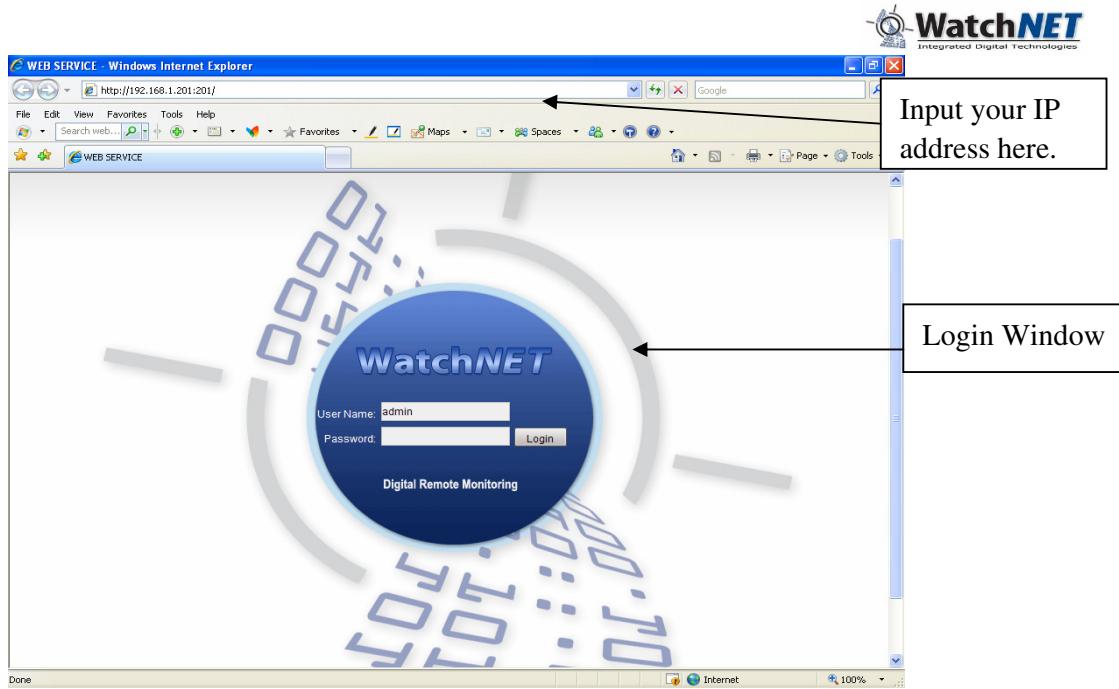


Figure 7-2

Default factory login username is "admin" and password is "1234".

Note: For security reasons, please modify the password after the first login.

7.3 Video

After login, the interface is shown as below. See 7-3.

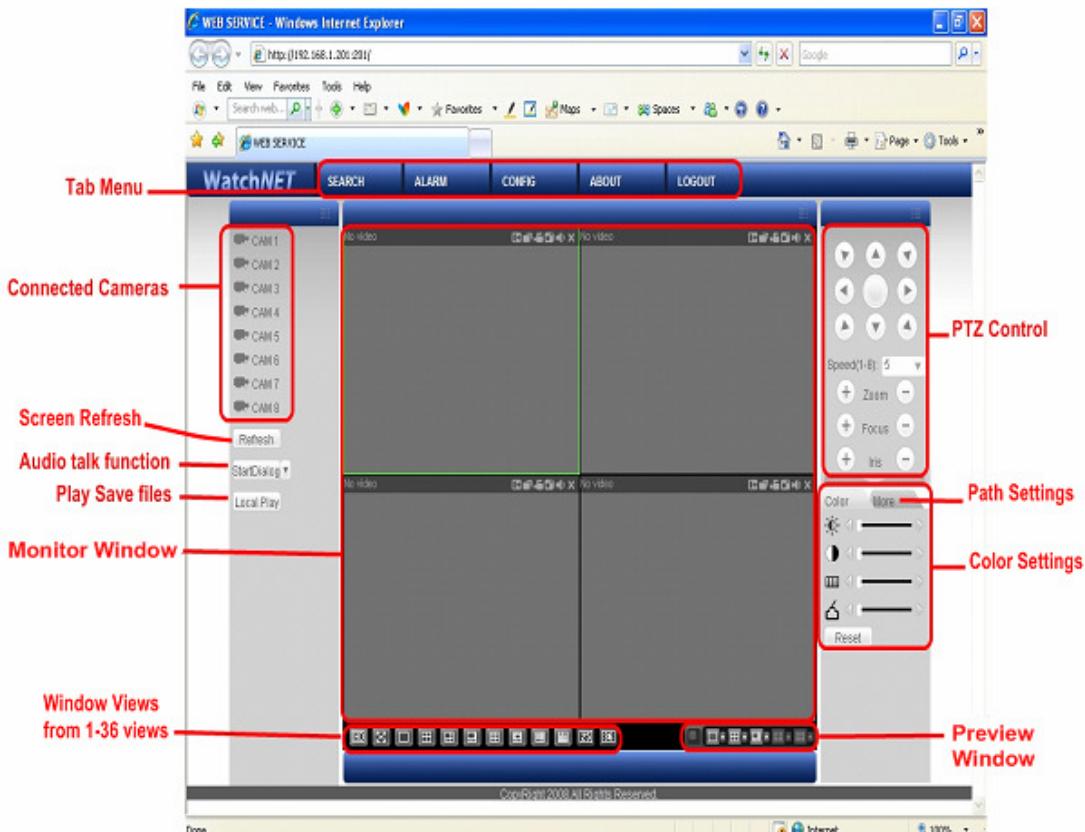


Figure 7-3

- Tab Menu: Select from the Menu to change some settings on the DVR
- Cameras: Click on the icons to connect to the camera
- Refresh: refresh the camera list
- Start Dialog: Enable Audio talk function
- Local Play: play video that is save to the local computer
- Start Dialogue: Click here to begin audio talk.
- Monitor Window: Choose the channel to view in full quality. Choose from Multi-Camera Preview, single view channels, full screen or change the quality.
- Preview window: 1-16 view per window. Watch 4 views in 1 window.



- Color Settings: change the color settings per window. Brightness, contrast, saturation and hue can be adjusted here
- Path Settings: Recording path, Picture path and reboot can be found here.
- PTZ Control: Here the PTZ movement can be controlled. Before operating, please make sure the correct PTZ protocol for the DVR is selected.
- Window View: See Figure 7-31

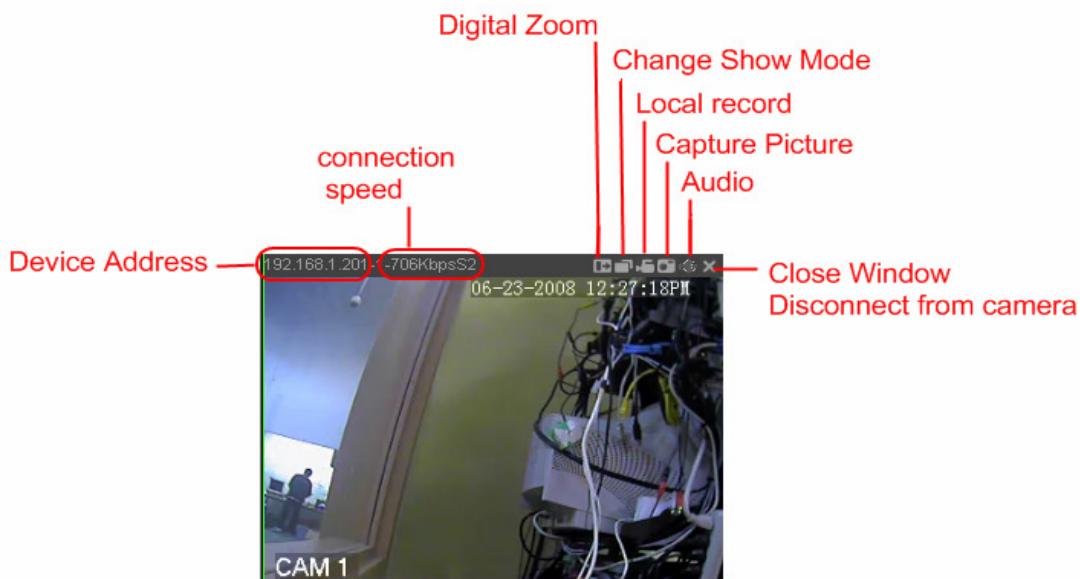


Figure 7-31

- Digital Zoom: Click this button and then left drag the mouse in the zone to zoom in. right click mouse system restores original status.

- Change Show Mode: resize or switch to full screen mode
- Local Record: When clicking local record button, the system begins recording and this button becomes highlighted.
- Capture Picture: take a picture and save to remote computer
- Close Window: disconnect to the current connected camera

7.3.1 PTZ Control

Please click the corresponding direction arrow to adjust zoom, focus and iris.
See Figure 7-3.

Note: Before operating this function, please make the PTZ protocol are set properly. (Main menu->Setting->Pan-tilt Zoom).

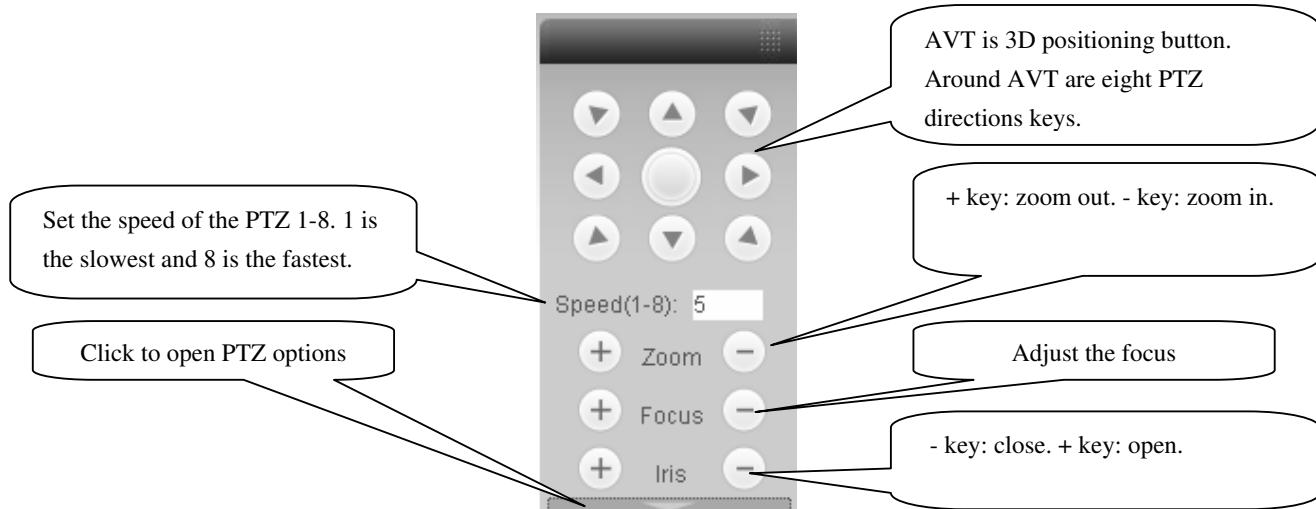


Figure 7-3

Note: This will only work while viewing using Real-Time Monitoring mode.
Clicking the arrow down button in Figure 7-3 will show the interface shown below.



Figure 7-4

In Figure 7-4, click the "PTZ SET" button to see the following dialogue box below. See Figure 7-5.



Figure 7-5

7.3.1.1 Auto Scan

In Figure 7-5 move the camera to the desired left limit location and then click left limit button. Then move the camera again to the desired right limit and then click right limit button to set the limits.

7.3.1.2 Pattern

In Figure 7-5 input pattern value and then click start record button to begin PTZ movement. Please go back to Figure 7-3 to implement camera operation. Then click stop record button to set the pattern.

7.3.1.3 Preset

In Figure 7-5 move the camera to the desired location and then input preset value. Click add button to save the preset.

7.3.1.4 Auto tour

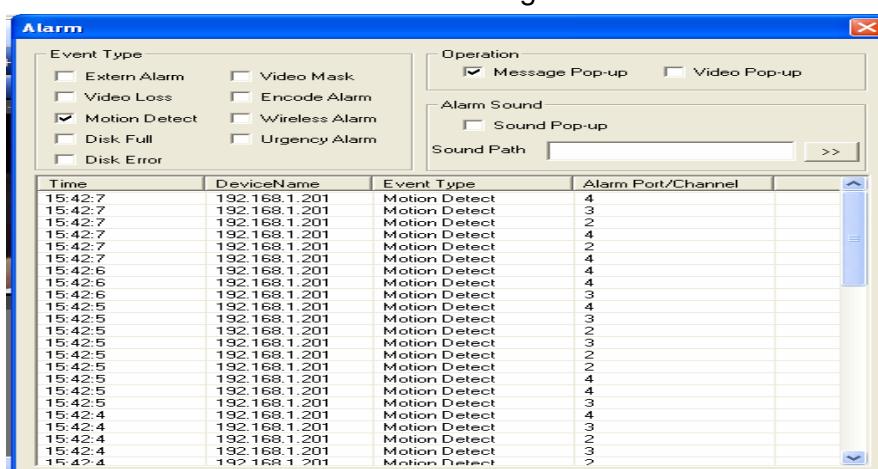
In Figure 7-5 input auto tour value and preset value. Click add button, to add one preset in the tour. Repeat the above procedures to add more presets in one tour.

7.3.1.5 Assistant

Select the assistant item from the dropdown list. See Figure 7-5.

7.4 Alarm Setting

Click Alarm to set local alarm settings and set local alarm audio file.



7.5 Search

Clicking the search button will show the interface below. See Figure 7-6
 Select the type, Begin/End Time and date, Channel Playback (up to 4 channels) and click the search button to display the recordings. Use the page up/down keys to view the search results. Double-click the file name and view the video.

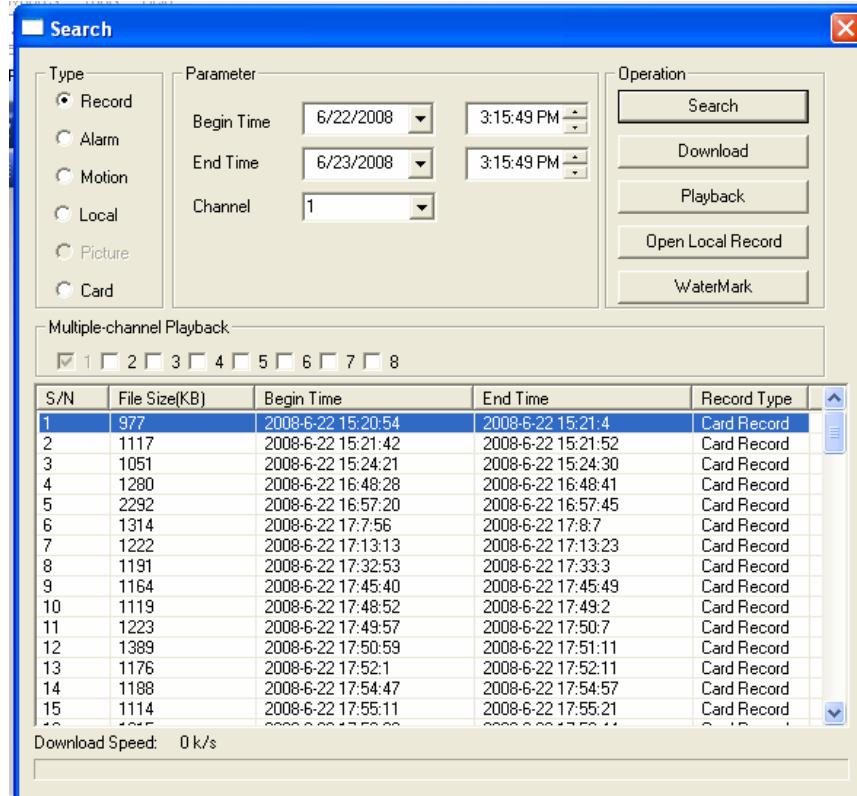


Figure 7-6

In the search result interface, one or more files to download to the local PC can be selected. The playback bar is shown as below. See Figure 7-7.



Figure 7-7

7.5.1 Download

One or more files can be selected to download and then click the download button. A dialogue box will appear asking for specific directory. See Figure 7-8.

Then the file name can be selected and click Save to save the file onto the local pc. While downloading, there is a progress bar for reference. See Figure 7-9.

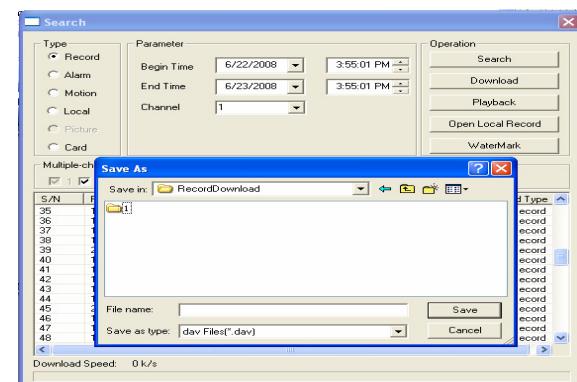


Figure 7-8

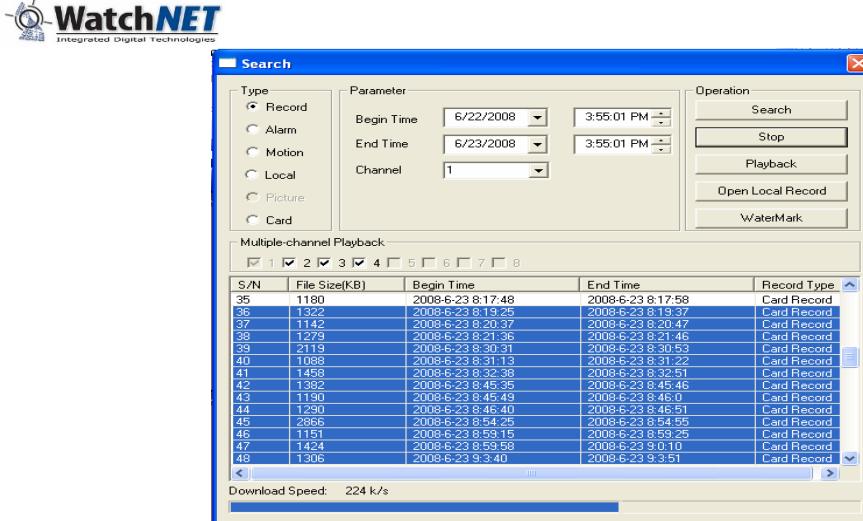


Figure 7-9

Downloaded file name is usually made up of: Filename + Date + Time+ Channel #. The file extension name is .dav.

For example

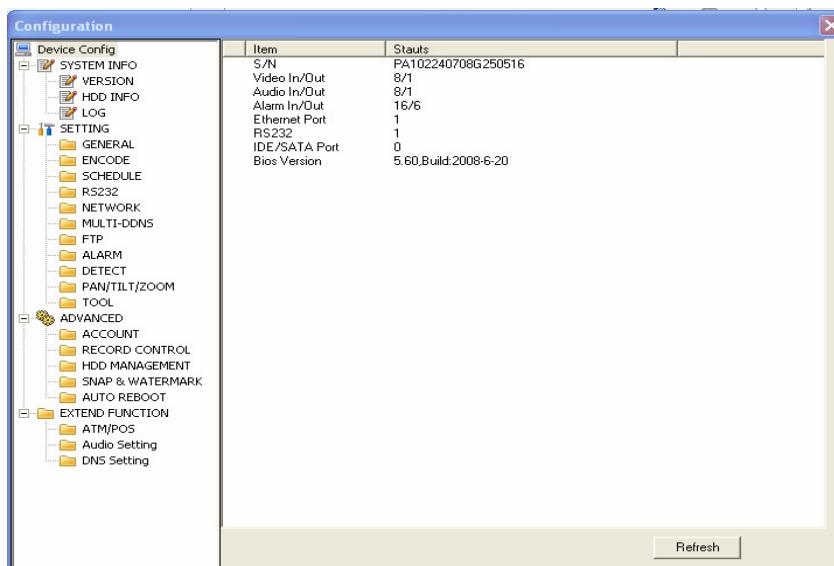
- [1]: channel 1
- 234: file name
- 20080622: 22nd June,2008
- 181643: 6 o'clock 16 minutes 43 seconds.



7.6 Config

Click the Config button to enter the DVR's configurations.

- System Info
- Setting
- Advanced
- Extended Function



7.6.1 System Info

Here the basic information of the system can be viewed, See Figure 7-10, such as:

- Version – shows the system features and bios version.
- HDD info – shows HDD status, free space and capacity.
- Log – Show the systems logs.

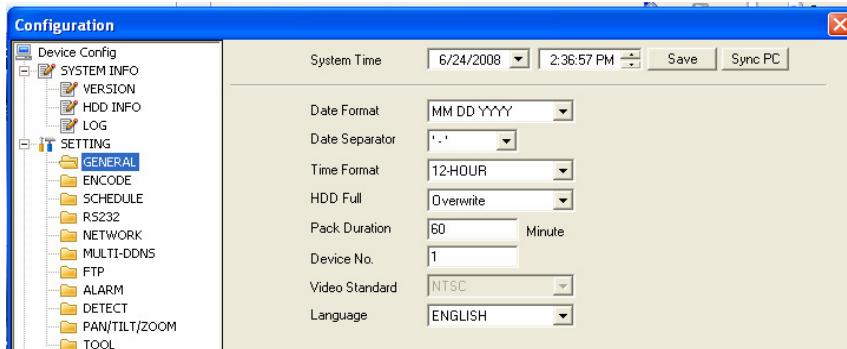
Configuration		
	Item	Status
Device Config	S/N	PA102240708G250516
SYSTEM INFO	Video In/Out	8/1
VERSION	Audio In/Out	8/1
HDD INFO	Alarm In/Out	16/6
LOG	Ethernet Port	1
	RS232	1
	IDE/SATA Port	0
	Bios Version	5.60, Build:2008-6-20

Figure 7-10

7.6.2 Setting

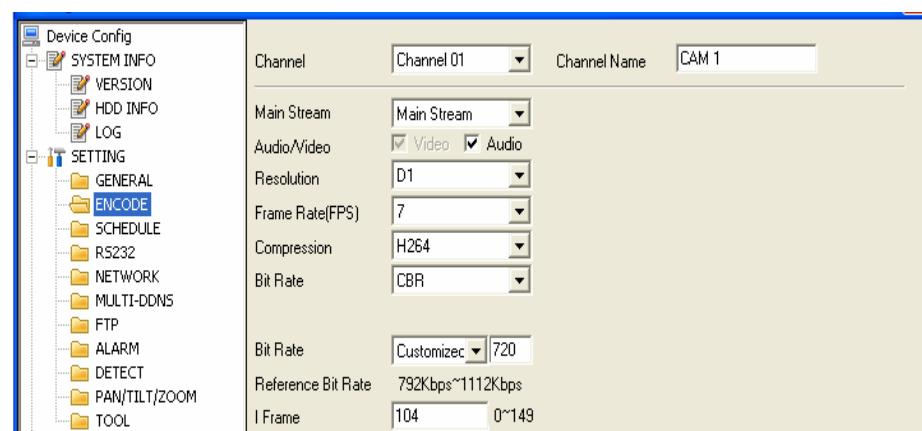
7.6.2.1 General

Click the general button, the interface below will be shown. Here file length can be change. And choose overwrite the previous file or stop recording when disk is full.



7.6.2.2 Encode

Change the DVR settings for quality, camera name, FPS, resolution, disable/enable audio



7.6.2.3 Schedule

Click Schedule, the interface is shown as Figure 7-11. Change the schedule thru the remote connection.

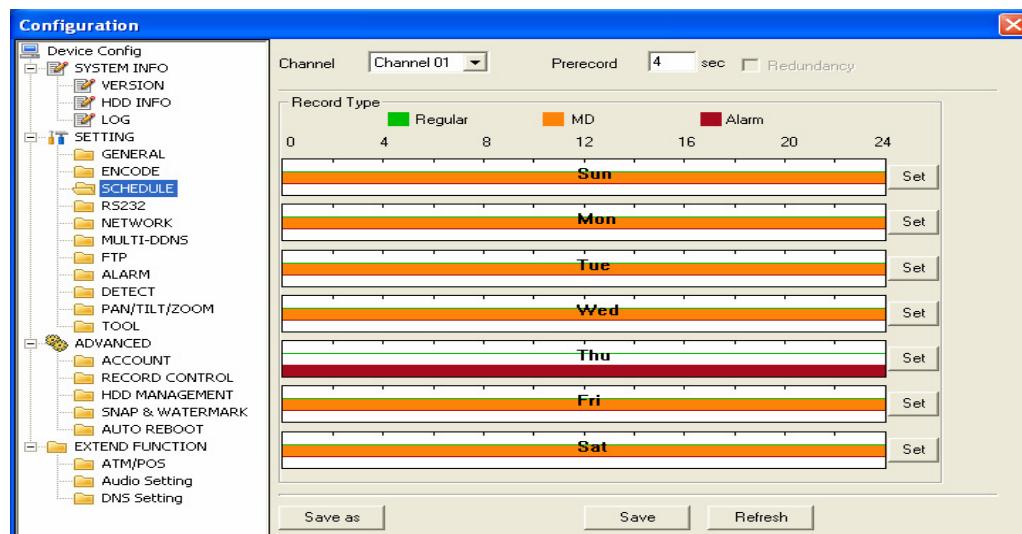


Figure 7-11

Tip:

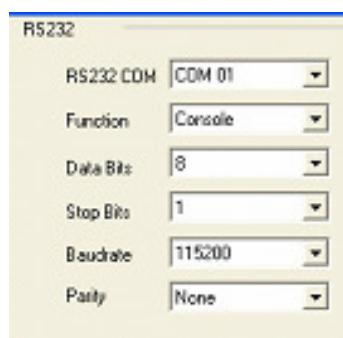
After finishing the setup for one channel, click “Save as” button, system pops up the following interface. See Figure 7-12. Copy one channel setup to other channels.



Figure 7-12

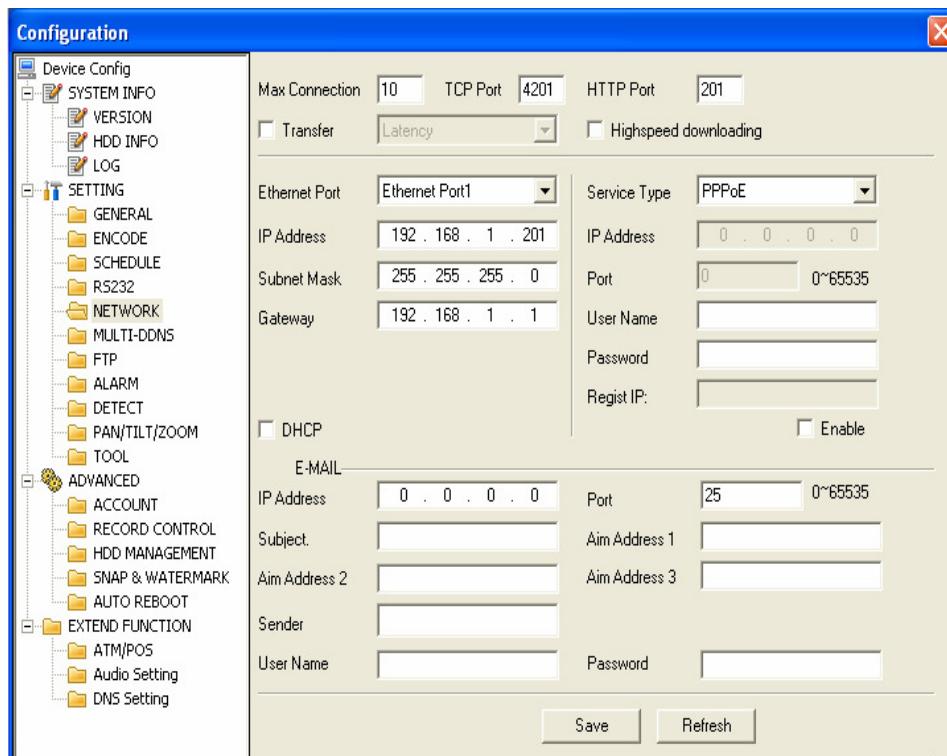
7.6.2.4 RS232

Change the COMPORT setting thru the Web



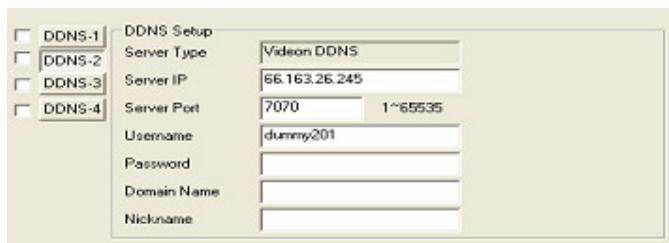
7.6.2.5 Network

Network parameter setup interface is shown below. This is used to modify DDNS, PPPoE, Email, DDNS settings.



7.6.2.6 Multi-DDNS

Use This Parameters if using Multiple DDNS sites

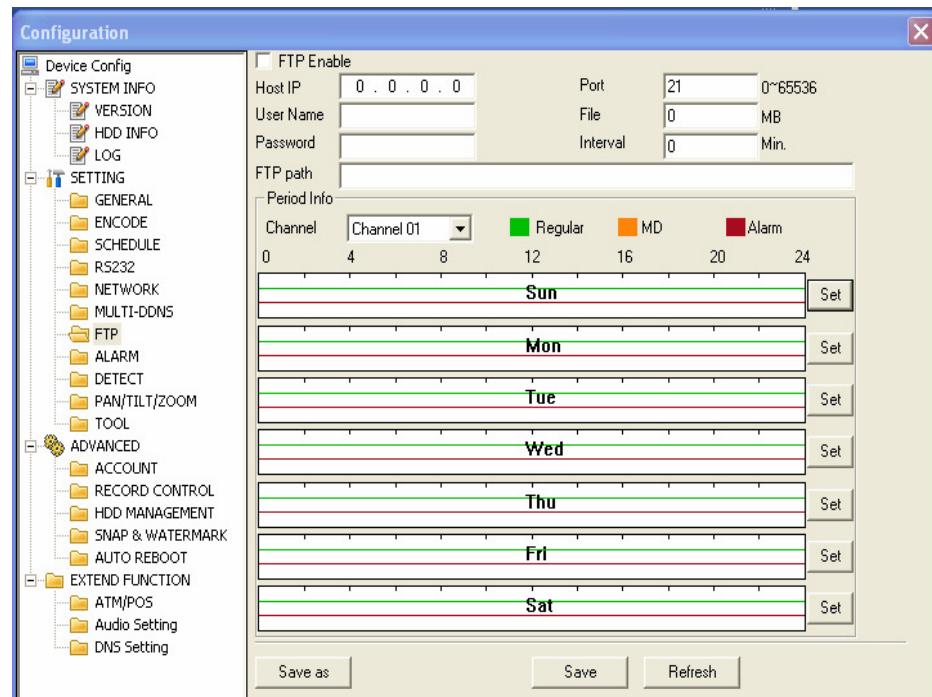


The screenshot shows the 'DDNS Setup' configuration window. It includes a list of four DDNS entries (DDNS-1 to DDNS-4) and a detailed configuration for DDNS-1:

<input type="checkbox"/> DDNS-1	Server Type: Video DDNS
<input checked="" type="checkbox"/> DDNS-2	Server IP: 66.163.26.245
<input type="checkbox"/> DDNS-3	Server Port: 7070 - 65535
<input type="checkbox"/> DDNS-4	Username: dummy201
	Password: (empty)
	Domain Name: (empty)
	Nickname: (empty)

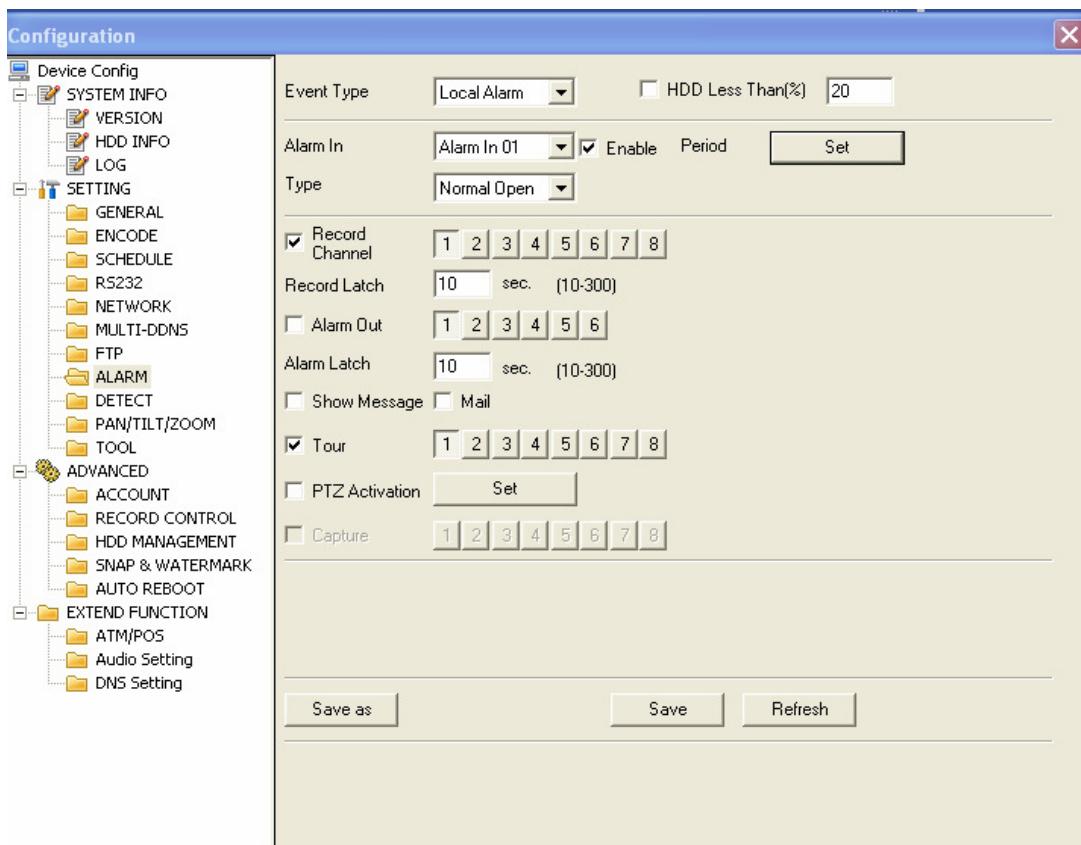
7.6.2.7 FTP

Enable/Disable FTP capabilities set the FTP parameters & FTP Schedules.



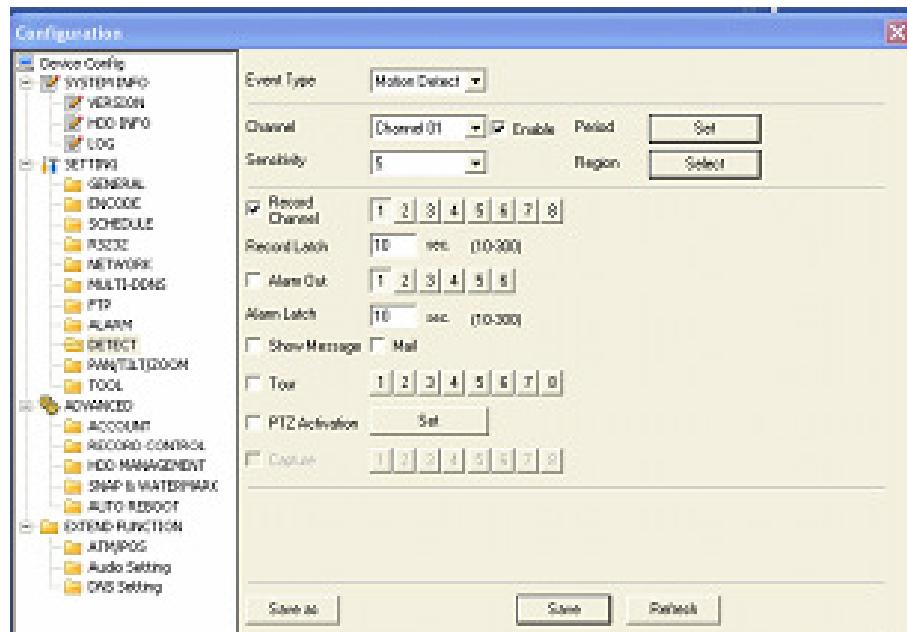
7.6.2.8 Alarm

Change the Alarm-in parameters of the DVR.



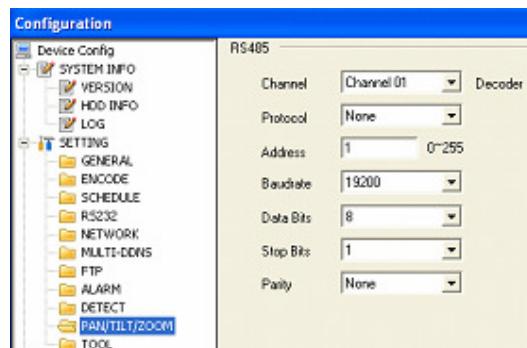
7.6.2.9 Detect

Change Event-Motion Detect settings. Set the re-action of the system if motion is detected.



7.6.2.10 PAN/TILT/ZOOM

Change the COMPORT parameters of the system.



7.6.2.11 TOOL

Create a backup of the configuration of the system.

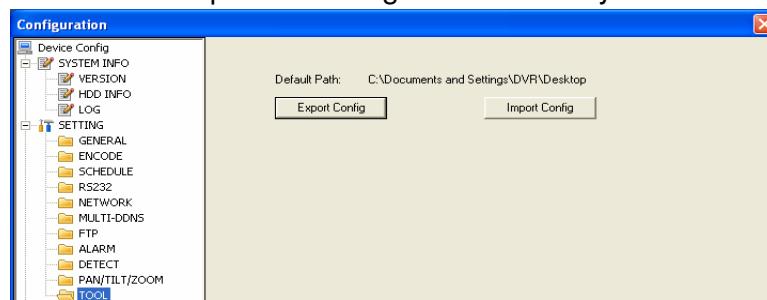
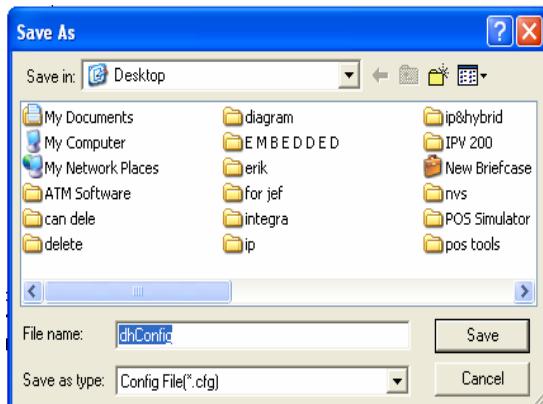
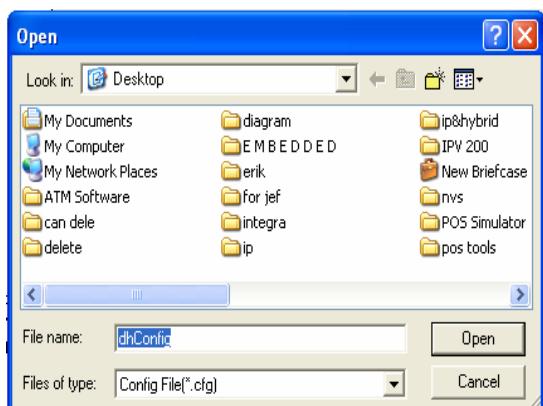


Figure 7.6.1



A. Export Config

Clicking the Export Configuration button in Figure 7.6.2.1 will save current configuration to a directory. The file extension name is .cfg.



B. Import Config

Click Import Config button in Figure 7.6.2.1 select the file to load a previously backed up configuration. Click the Open button to updated the system setup

7.6.3 Advance

Modify Advance settings of the DVR

7.6.3.1 Account

Add/Delete User and Group. Modify User and Groups rights and change password

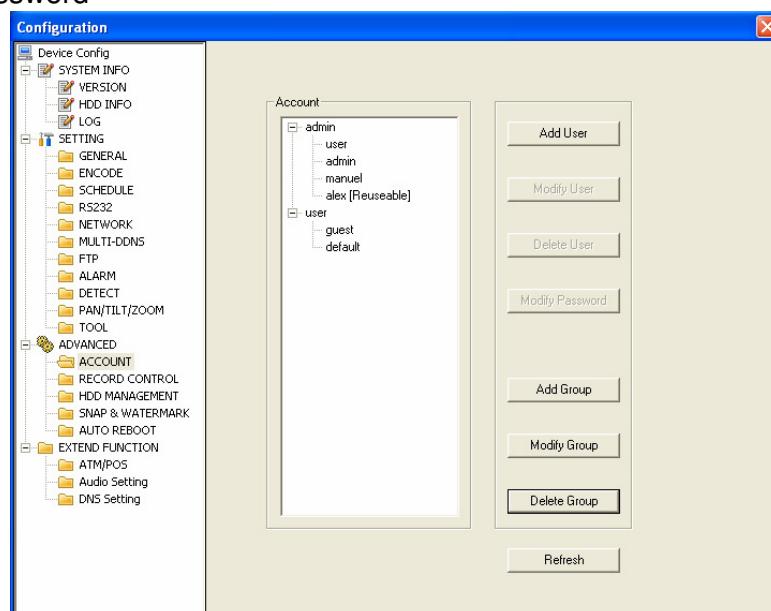


Figure 7-13

7.6.3.2 Record Control

Click “record control” button the interface is shown as below. See Figure 7-14. Select the recording mode for each channel. Select the Alarm output channel. Alarm output channel can not support large overload. (Use less than 1A). Too heavy current may result in relay damage. Please use contactor if necessary.

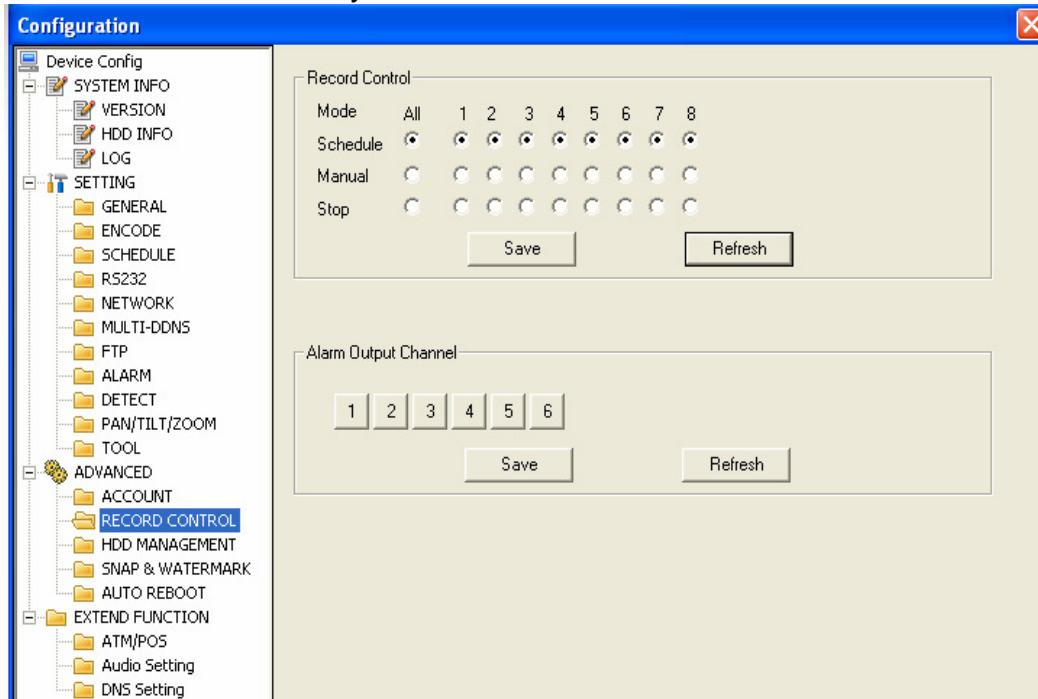
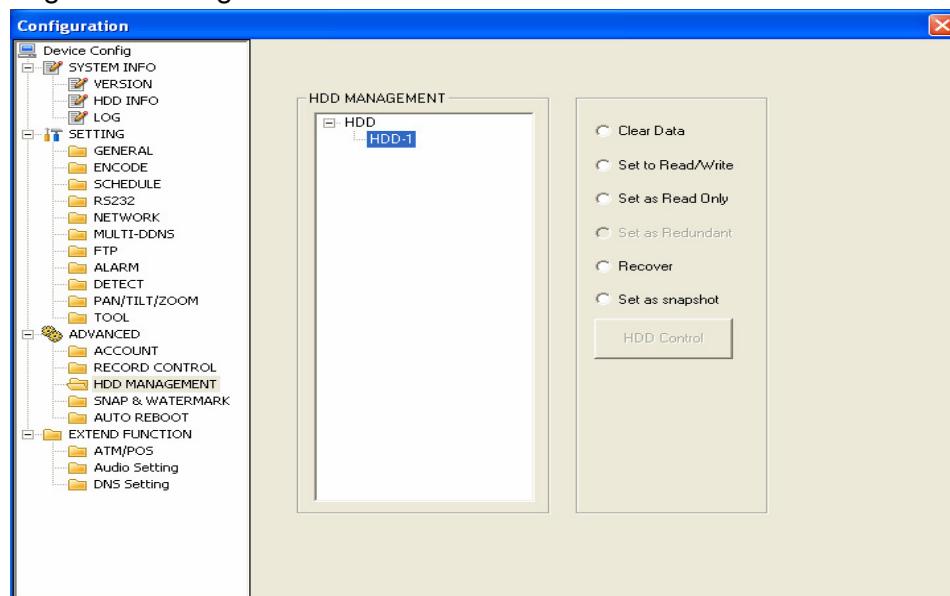
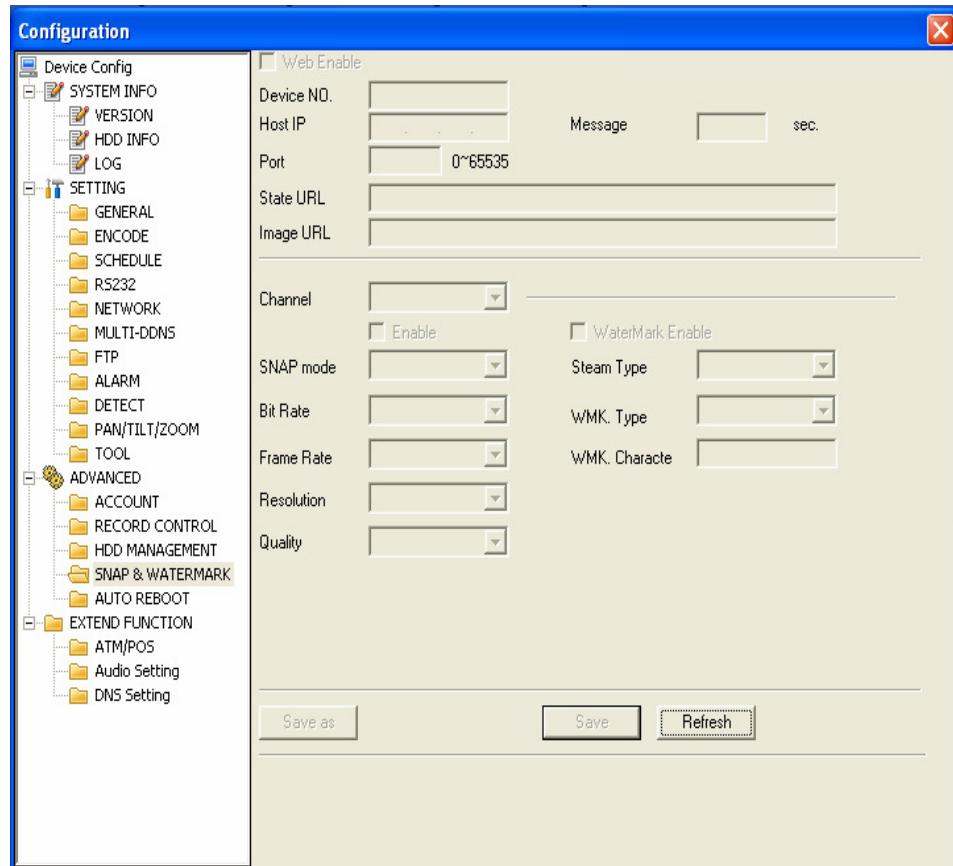


Figure 7-14

7.6.3.3 Record Control

Please select the HDD first and then the items on the right become valid. Select the option that is needed and then click HDD control. The DVR begins restarting.



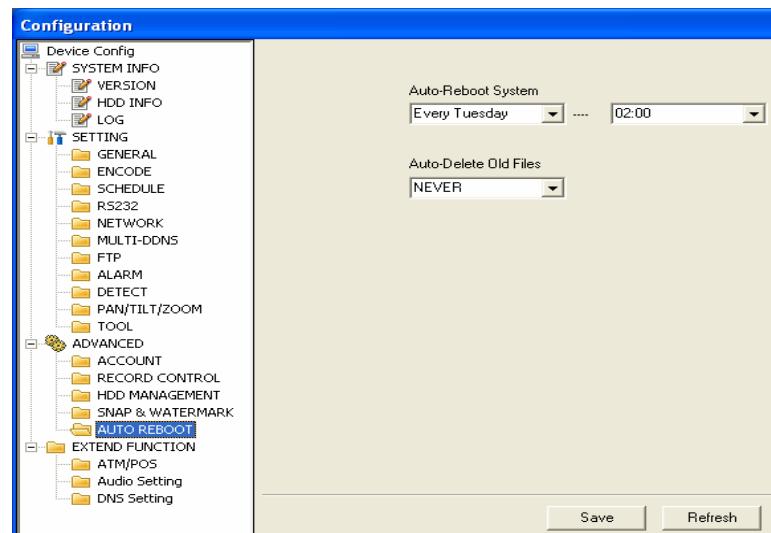


7.6.3.4 Snap & Watermark

Please note this function is only supported on special series DVR.

7.6.3.5 Auto Reboot

Enable the auto restarting of the DVR and the auto delete of old files function.

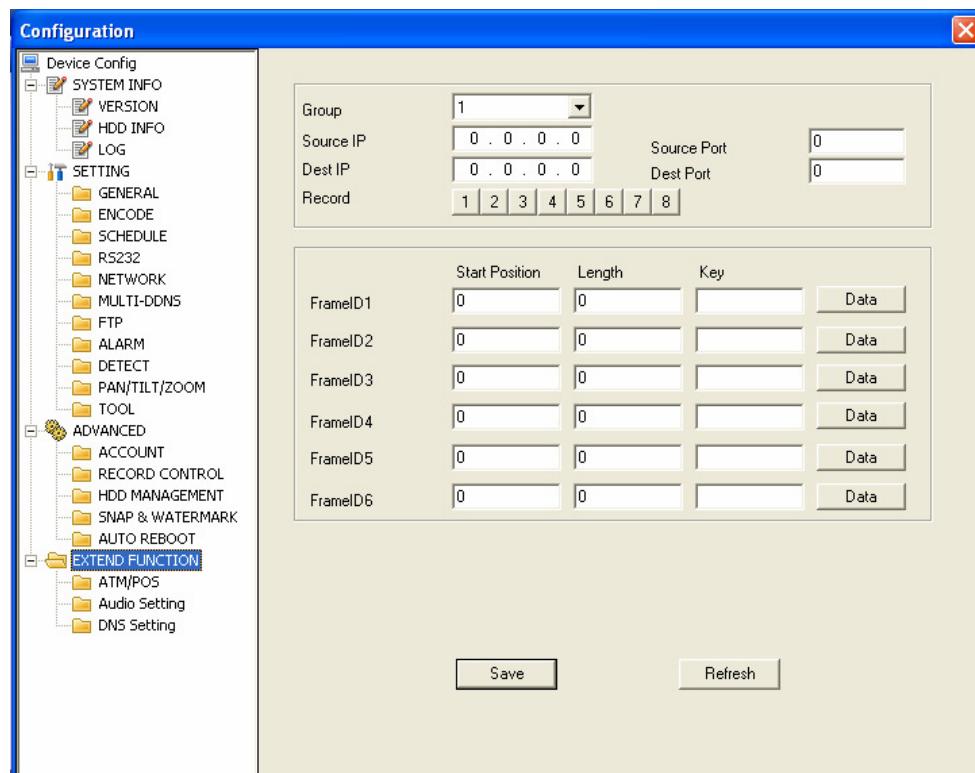


7.6.4 Extend Function

Change the parameters of the Extended Function of the DVR

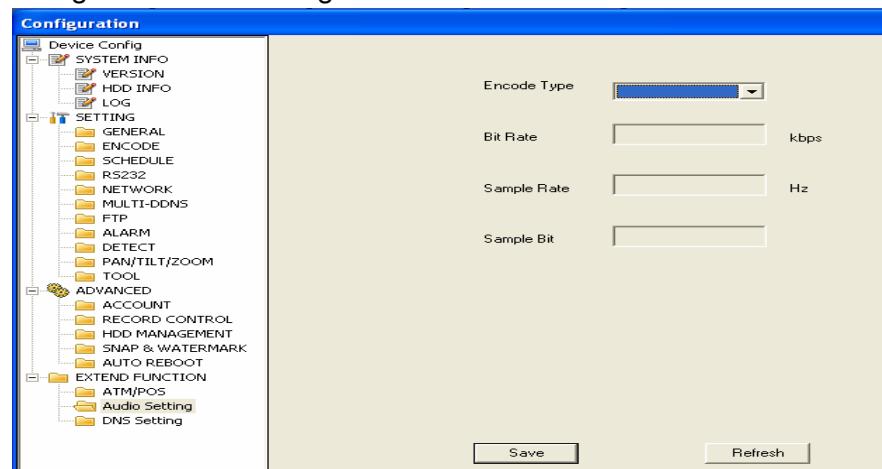
7.6.4.1 ATM/POS

Set the input DATA of the POS system of the DVR



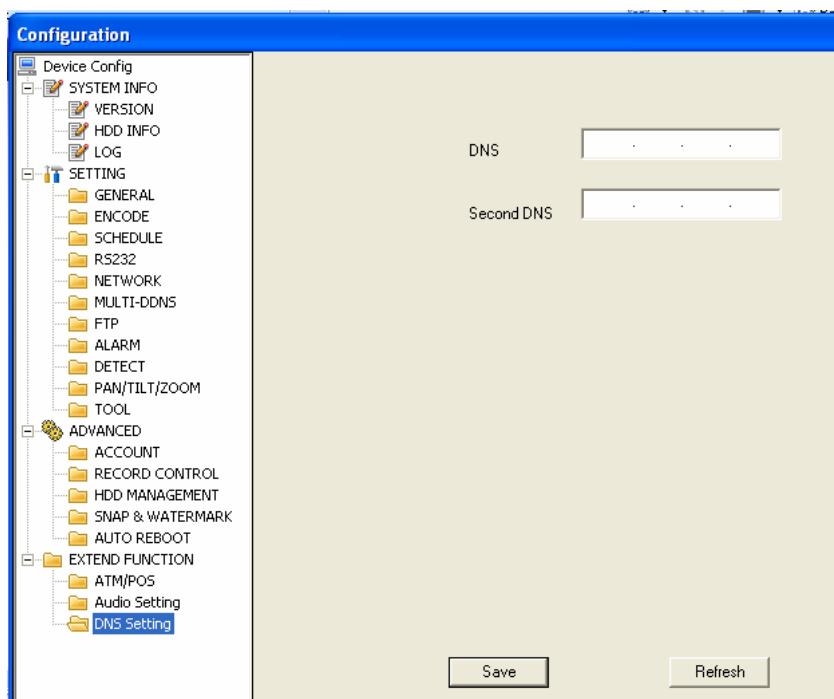
7.6.4.2 Audio Settings

Change the audio settings of the DVR



7.6.4.3 DNS Setting

Add a Network DNS to the DVR



7.7 About

Click the About button to view current web client information.



7.8 Un-install Web Control

There are three ways to un-install web control.

- From start, click run and then input order regsvr32 -u WebRec.ocx.
- Use web un-install tool “Uninstall Web.bat” to un-install web control.
- By clicking the link <http://www.viewdvr.com/uninstall%20web.bat>

8 Pro Surveillance System

Professional surveillance system allows the managing of Multiple DVRs remotely.

8.1 Features

Professional surveillance system has the following features:

- Manage devices conveniently
- Support multiple-device connection, real-time surveillance and playback
- Device management, log review and user management
- PTZ control and device alarm, video record
- Support multiple-device upgrade simultaneously
- E-map and network backup support

8.2 Environment

We recommend the following configuration:

Hardware

- CPU P4 2.0G
- Display card: support hardware zoom such as ATI, TNT2 PRO. We recommend ATI9800 or above dual channel. 128M/128bit
- Network card: 100M

Software

- For client end we recommend Windows 2000 or Windows XP.

8.3 Overview

Multiple-client main window is shown as in Figure 8-1.

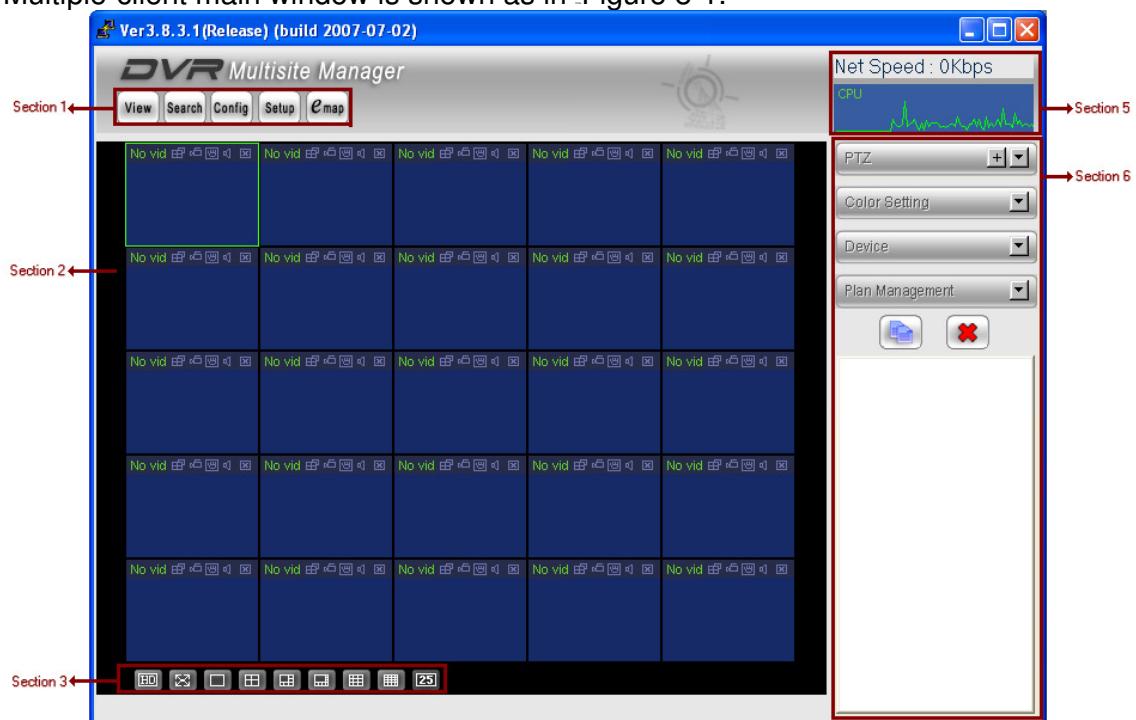


Figure 8-1

There are five sections in total:

- Section 1: There are five function keys: View, Search, Configure, Setup and E-map.
- Section 2: Here viewing channel video can be selected.

- Section 3: Here various display modes can be selected. This system supports the following display modes: full-screen /single window/four-window/six-window/eight-window/nine-window/sixteen-window.
- Section 4: This section displays data flux and CPU status.
- Section 5: There are four function buttons: PTZ/Color setting/Device/Plan Management.

8.4 More Details

Please refer to the Professional Surveillance System User's Manual for more information.

9 RS232 Operation

9.1 Network Connection

Before serial port operation, please connect matrix with the DVR through RS232. Then set DVR serial port protocol to the corresponding matrix protocol.

Note: Please contact the local retailer to confirm if the DVR supports matrix protocol.

9.2 Keyboard

Control keyboard is very convenient for multi-DVR control, menu options and PTZ control. Select “Keyboard Control” from system **Setting -> RS232 ->**

Function. Then set the concerning attributes such as the protocols. Connect the DVR RS232 port to shifter 25-pin RS232 port and then set the proper control addresses for all connected DVRs. Now input DVR control address and use keyboard keys to set menu or control a PTZ. See Figure 9-1.

Note: The keyboard works only when ACT light is on.

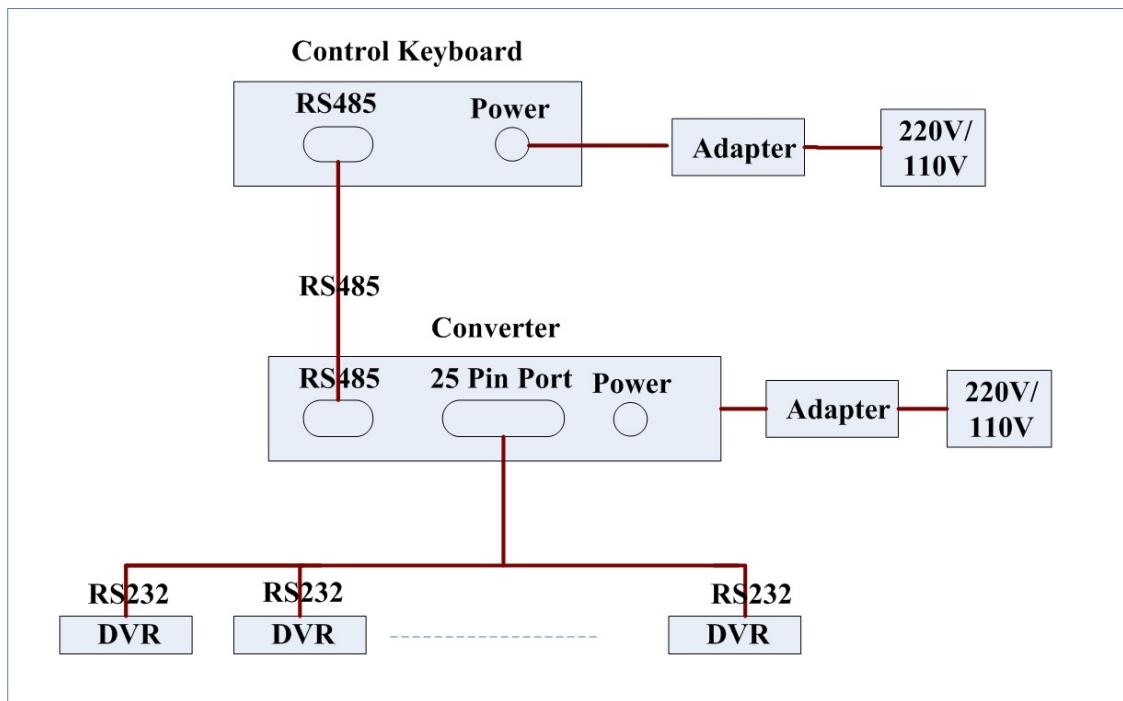


Figure 9-1

10 FAQ

1. This system can run in windows 98 or not?

Please install DIRECTX 7.0 or higher manually if you want to run this system in a Windows 98 environment.

2. System cannot detect hard disk.

First check whether the hard disk is broken.

Then check jumper, IDE data cable and power cord. Please make sure they are appropriately connected.

When only one hard disk is connected to an IDE interface, this hard disk has to be jumped to master disk, or master w/o slave.

3. I cannot use schedule recording function.

Please note the recording time unit takes one day as a working unit. E.g.: from 0 o'clock to 24 o'clock.

4. Recording light is flashing during the whole recording procedure.

Check the external video input signal. Such phenomena usually happen when the inputting signal is not standard.

Sometimes the reading speed of the HDD may be too slow, if this phenomenon occurs. You will need to change hard disk.

5. My DVR is very hot, is there any problem?

DVR running procedures will generate a considerable amount of heat. It is a normal phenomenon.

Please note DVR installation environment should be dry and clean. Keep ventilation openings smooth. Otherwise it will reduce system stability and lifespan.

6. I cannot see video signal on one channel while the other channels are ok

Check the video cable connection. You can connect camera video cable directly to monitor to test. If there is still no signal, there may be a problem with camera or video cable. If there is a video signal please contact your local suppliers for help.

7. I cannot use my remote controller.

Check ACT light on the front panel is on or not.

- Power light is on:

You need to change your remote controller battery.

- Power light is off:

Please move remote controller directly to the DVR, and then press address button. System pops up address input dialogue box. Please input your remote address (default value is 008). When ACT light is on, you can use it now.

8. I cannot control PTZ or dome

Check connection is right or not

Check system setup. Please refer to 5.3.8 pan-tilt setup.

Protocol should conform to dome (PTZ) setup.

If Protocol is a matched, contact your local supplier for more information.

9. I cannot login via web

There are three conditions:

- Network connection failure

Check your DVR and PC connection is right or not. Please check your DVR IP, network cable, or use ping to check.

- Invalid password or username

- Username you are trying to use is in use locally

10. during the initial connection, the surveillance video is poor when I connect to the server.

If the image returns to normal in five seconds, this phenomenon is normal.

11. What peripheral equipment the DVR can work with?

DVR supports much peripheral equipment such as keyboard, matrix, control decode card, alarm input and output equipment, alarm server, and access control system.

Slight differences may be found in user interface.

All the designs and software here are subject to change without prior written notice.

Please visit our website for more information.

Appendix A HDD Capacity Calculation

Calculate the total capacity needed by each DVR according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity q_i that is the capacity of each channel needed for each hour, unit MByte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula: d_i means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity m_i , which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

h_i means the recording time for each day (hour)

D_i means number of days for which the video

shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation) q_T that is needed for all channels in the DVR during **scheduled video recording**.

$$q_T = \sum_{i=1}^c m_i \quad (3)$$

In the formula: c means total number of channels in one DVR

Step 4: According to Formula (4) to calculate total capacity (accumulation) q_T that is needed for all channels in DVR during **alarm video recording (including motion detection)**.

$$q_T = \sum_{i=1}^c m_i \times a\% \quad (4)$$

In the formula:

$a\%$ means alarm occurrence rate

Appendix B Compatible USB Drive List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below. For USB drive, please confirm the format FAT32.

Manufacturer	Model	Capacity
Sandisk	Cruzer Micro	512M
Sandisk	Cruzer Micro	1G
Sandisk	Cruzer Micro	2G
Sandisk	Cruzer Freedom	256M
Sandisk	Cruzer Freedom	512M
Sandisk	Cruzer Freedom	1G
Sandisk	Cruzer Freedom	2G
Kingston	DataTraveler II	1G
Kingston	DataTraveler II	2G
Kingston	DataTraveler	1G
Kingston	DataTraveler	2G
Maxell	USB Flash Stick	128M
Maxell	USB Flash Stick	256M
Maxell	USB Flash Stick	512M
Maxell	USB Flash Stick	1G
Maxell	USB Flash Stick	2G
Kingax	Super Stick	128M
Kingax	Super Stick	256M
Kingax	Super Stick	512M
Kingax	Super Stick	1G
Kingax	Super Stick	2G
Netac	U210	128M
Netac	U210	256M
Netac	U210	512M
Netac	U210	1G
Netac	U210	2G
Teclast	Ti Cool	128M
Teclast	Ti Cool	256M
Teclast	Ti Cool	512M
Teclast	Ti Cool	1G
Teclast	Ti Cool	2G

Appendix C Compatible CD/DVD Burner List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below. And you can use the USB cable with the model recommended to set USB burner.

Manufacturer	Model	Interface	Type
Sony	AW-G170S	SATA	DVD-RW
Samsung	TS-H653A	SATA	DVD-RW
Panasonic	SW-9588-C	SATA	DVD-RW
Sony	DRX-S50U	USB	DVD-RW
BenQ	5232WI	USB	DVD-RW

Appendix D Compatible SATA HDD List

NOTE: Please upgrade the DVR firmware to latest version to ensure the accuracy of the table below.

Manufacturer	Series	Model	Capacity	Type
Seagate	Barracuda.10	ST3750640AS	750G	SATA
Seagate	Barracuda.10	ST3500630AS	500G	SATA
Seagate	Barracuda.10	ST3400620AS	400G	SATA
Seagate	Barracuda.10	ST3320620AS	320G	SATA
Seagate	Barracuda.10	ST3250620AS	250G	SATA
Seagate	Barracuda.10	ST3250820AS	250G	SATA
Seagate	Barracuda.10	ST3160815AS	160G	SATA
Seagate	Barracuda.10	ST380815AS	80G	SATA
Seagate	Barracuda.9	ST3160811AS	160G	SATA
Seagate	Barracuda.9	ST3120811AS	120G	SATA
Seagate	Barracuda.9	ST380811AS	80	SATA
Seagate	Barracuda.9	ST380211AS	80G	SATA
Seagate	Barracuda.11	ST3750330AS	750G	SATA
Seagate	Barracuda.11	ST3500320AS	500G	SATA
Maxtor	DiamondMax 20	STM3320820AS	320G	SATA
Maxtor	DiamondMax 20	STM3250820AS	250G	SATA
Maxtor	DiamondMax 21	STM3160211AS	160G	SATA
Maxtor	DiamondMax 21	STM380211AS	80G	SATA
Maxtor	DiamondMax 21	STM340211AS	40G	SATA
Western Digital	Caviar SE	WD3200JD	320G	SATA
Western Digital	Caviar SE	WD3000JD	300G	SATA
Western Digital	Caviar SE	WD2500JS	250G	SATA
Western Digital	Caviar SE	WD2000JD	200G	SATA
Western Digital	Caviar SE	WD1600JD	160G	SATA
Western Digital	Caviar SE	WD1600JS	160G	SATA
Western Digital	Caviar SE	WD1200JS	120G	SATA
Western Digital	Caviar SE	WD800JD	80G	SATA
Western Digital	Caviar	WD1600AABS	160G	SATA
Western Digital	Caviar	WD800BD	80G	SATA
Western Digital	Caviar SE16	WD7500KS	750G	SATA
Western Digital	Caviar SE16	WD5000KS	500G	SATA
Western Digital	Caviar SE16	WD4000KD	400G	SATA
Western Digital	Caviar SE16	WD3200KS	320G	SATA
Western Digital	Caviar SE16	WD2500KS	250G	SATA